CURRITUCK COUNTY

NORTH CAROLINA

LAND USE PLAN

COASTAL AREA MANAGEMENT

ACT OF 1974

APRIL, 1976

THIS REPORT HAS BEEN PREPARED FOR
THE RESIDENTS OF CURRITUCK COUNTY, NORTH CAROLINA

COUNTY COMMISSIONERS

H. O. Capps, Chairman

Baxter Williams
Charlie Dozier
James M. Voliva
R. H. Farrell

PLANNING BOARD

Jimmy Ferebee, Chairman

Travis Morris
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Graham Pervier, County Manager

PROJECT STAFF

Lee Downie, Community Planner
Debra Ingalls, Secretary
Mary Noe, Secretary
Danny Smith, Draftsman
Mike Yount, Draftsman

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COUNTY OF CURRITUCK

Currituck, North Carolina 27929

May 18, 1976

OFFICE OF THE
COUNTY MANAGER
919/232-2075

Mr. T. D. Eure
Chairman
Coastal Resources Commission
Morehead City, North Carolina 28557

Dear Mr. Eure:

I hereby certify that the attached land use plan was adopted by the Board of Commissioners at a regular meeting on May 17, 1976 and is transmitted herewith pursuant to G.S 133A, Article 7.

Witness my hand and seal this 18th day of May, 1976.

Graham W. Pervier
Clerk to the Board

Seal

GWP/ahw

INTRODUCTION

The coastal area of North Carolina is one of the most important regions in the United States for food production, future expansion of commerce, industry and recreation. To enable orderly growth and protection of important natural resources of that area, the 1974 General Assembly passed the Coastal Area Management Act.

The Coastal Area Management Act is a state law that asks local government in 20 counties in Coastal North Carolina to prepare a blueprint for their future growth and development. The county officials are asked to work closely with local citizens in deciding what their goals are, in planning for their best use.

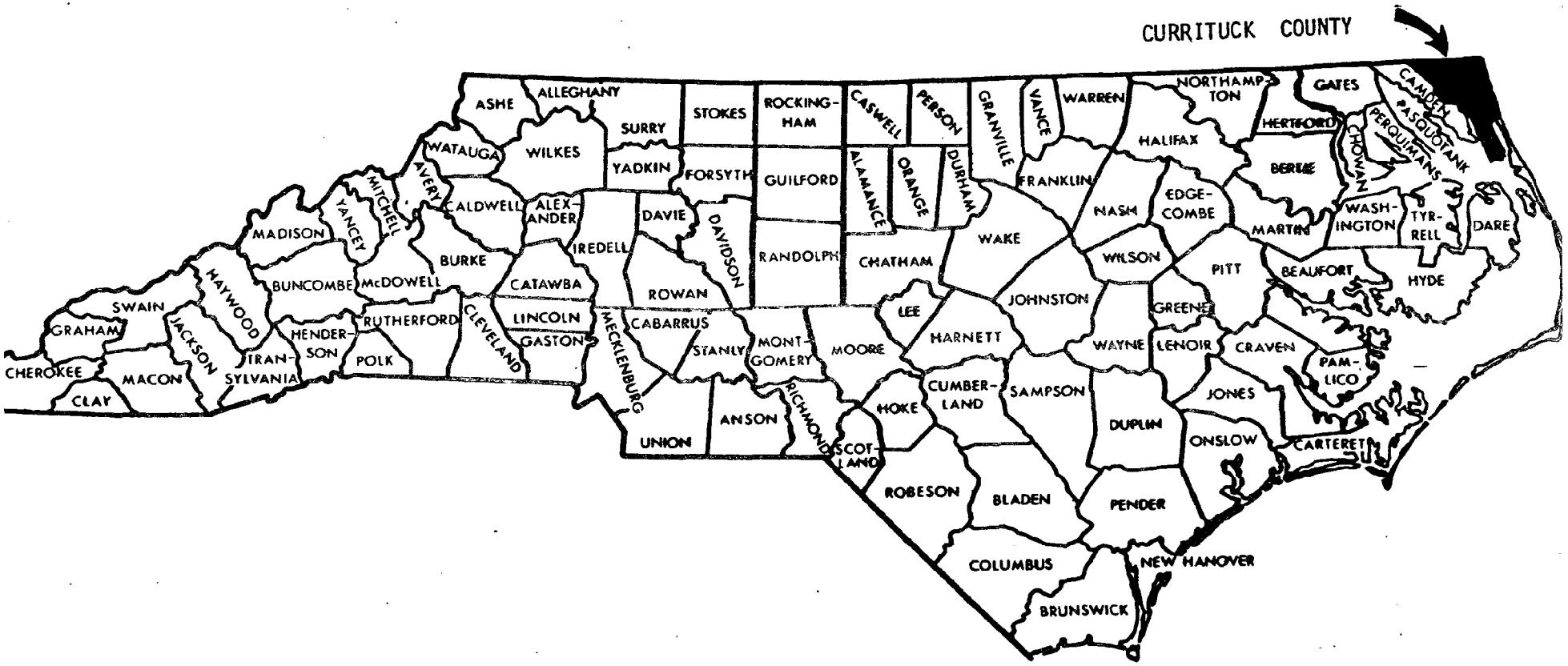
Thus, it is essential for any local official or any coastal citizen to understand the legislative goals of the management system as stated in the Act: Briefly, they are:

> To provide a management system capable of preserving and managing the natural ecological conditions of the estuarine system, the barrier dune system, and the beaches, so as to safeguard and perpetuate their natural productivity and their biological, economic and aesthetic values.
>
> To insure that the development or preservation of the land and water resources of the coastal area proceeds in a manner consistent with the capability of the land and water for development, use, or preservation based on ecological considerations.
>
> To insure the orderly and balanced use and preservation of our coastal resources on behalf of the people of North Carolina and the nation.
>
> To establish policies, guidelines and standards for the conservation of resources; the economic development of the coastal area; the use of recreational lands and tourist facilities; the wise development of transportation and circulation patterns; the preservation and enhancement of historical, cultural and scientific aspects of the region; and the protection of common law and public rights in the lands and waters of the coastal area.

To achieve these goals, the Act creates two land use management tools: land use plans and areas of environmental concern.

Land Use Plans - Each county will prepare a land use plan. The Plans will be based on the goals of the people in the county, the resources available in the county, and the most reasonable path for reaching toward those goals with the resources available. After the plans are adopted, use of the land must agree with the plans.

Areas of Environmental Concern - These areas and their boundaries will be designated by the Coastal Resources Commission. They may include such areas as marshlands, beaches, and sand dunes, navigable waters, national and state parks, areas of historical importance and others whose use is of importance not only locally, but to the State and the Nation. Any development within an area of environmental concern must have a permit. The Act does *not* require permits for development outside areas of environmental concern. The Act requires the following projects in areas of environmental concern to obtain a permit from the Coastal Resources Commission: those that involve drilling or excavating natural resources on land or underwater; those which involve construction of one or more structures with an area in excess of 60,000 square feet. Development in areas of environmental concern which no not meet one of the above definitions will require a permit from the local government.



REGIONAL LOCATION MAP

POPULATION AND ECONOMY:

A BRIEF ANALYSIS

Major Growth Trends

Currituck County is located in a region of North Carolina where the long-term trend has been a stable or declining population. Between 1950 and 1970, however, Currituck's population grew by approximately 12.5 per cent, from 6,201 to 6,900.

Based on estimates from a count of dwelling units, the county's population in April, 1975 was 9,500--an increase of 38 per cent since 1970. This indicates that the county is in the midst of a rapid growth phase not evident in trends established from census data.

Recent growth is the result of in-migration from the Norfolk-Portsmouth area rather than natural growth. The majority of these in-migrants are young families with young children. This group has tended to settle in the northern part of the county (particularly Moyock Township) convenient to their Virginia jobs. However, an increasing number of newcomers are in the retirement age group. These people are drawn to the central part of the county, particularly to waterfront property and the Outer Banks.

Population Composition

In 1950 there was a distinct surplus of men in Currituck's population (they outnumbered women 107:100). By 1970 the ratio of men to women was almost perfectly balanced (99.48:100).

The median age of Currituck's population, 31.0 years, is rather high when contrasted with that of North Carolina as a whole (28). This is a product of the out-migration of young people for several decades--itself a product of declining agricultural employment. The new wave of in-migration and higher birth rates due to the increased number of young women in the county is likely to produce a slight decrease in the median age during the next decade.

Employment

Agriculture has been the dominant sector of the local economy since the county was settled in the seventeenth century.

Parallelling the national trend, agricultural employment has declined dramatically since 1950. At the same time employment in manufacturing, construction, trade, and services has grown substantially.

Many of the new non-agricultural jobs are located outside the county. Between 1960 and 1970, the share of the county's labor force commuting to Norfolk-Portsmouth increased from 22 per cent to 35 per cent. This established Currituck as a "suburb" of the Virginia area. During the same period the share of the total labor force commuting anywhere out of the county increased from 30 per cent to 49 per cent.

Increases in non-agricultural employment have been accompanied by a marked reduction in seasonal employment fluctuations. As recently as 1972, unemployment approached the 20 per cent mark in January dropping to under 3 per cent in June. Data for 1974 indicates a much narrower range: 7.8 per cent in January and 5.1 per cent in May.

Personal Income

In 1973 the median family income was $6,067--well below the mean income of $7,293. The wide disparity between mean and median indicates a disproportionately large number of families in the lower income group (some 42 per cent of the families in the county has 1973 incomes of less than $5,000). Both median and mean incomes were below those of the Norfolk-Portsmouth area and of the state of North Carolina as a whole. Even after adjustments in the value of the dollar, the 1973 income levels were substantially improved over those of a decade earlier.

Retail Sales

As measured by retail sales, Currituck's economy has gone through three distinct phases since 1960. In the early part of the 1960's, retail sales increased by 85 percent, from $3 million to $5.5 million. In the second phase, 1967 to 1970, retail sales (in deflated dollars) showed a slight decline, reflecting the mild economic recession experienced at the national level. Since 1970, retail sales have increased by more than 50 percent, coinciding roughly with the county's rapid population growth.

(Principal sources: 1,2)

EXISTING LAND USE

Overview

The Existing Land Use map shows generally how land in the county is now being used. The map clearly shows the county's rural nature and the importance of agriculture in its economy. The vast expanses of water, marshland, and forests further illustrate the close working relationship between Currituck's people and their natural environment. Business and industrial establishments are thinly scattered along main highways, the largest groupings being found in Moyock and Coinjock. Most permanent residences in the county are farm homes but in recent years there has been a dramatic increase in non-farm residences. Many mobile homes, for instance, are occupied by people with government or factory jobs which are located in nearby Virginia. New residences along the Sound and on the Outer Banks are signs of the county's attractiveness for retirement and vacation homes.

Problems from Unplanned Development

The primary land use problems in the County have arisen from high density mobile home parks, and mobile home subdivisions which have been located in areas which were previously agricultural. This type of growth has not occurred adjacent to existing communities, but at random places where land has become available. This creates sudden overloads on secondary roads, overnight imbalances in school attendance areas, and concentrations of buildings and population some distance from existing fire and rescue facilities.

Land Use Compatibility Problems

Despite the problems mentioned above, certain types of compatibility problems have been avoided through enforcement of the Zoning Ordinance. In particular, several potentially unfor· . intrusions of commercial activity in residential areas has been avoided. One frequent citizen complaint has been the odor from hog lots which disturbs nearby residential areas from time to time. Since farms are not regulated by zoning and the odor problem is not otherwise regulated, no satisfactory solution to this problem has been proposed.

Areas Likely to Experience Major Land Use Changes

Contrary to popular belief, the areas being developed in the County are not agricultural lands which farmers have been forced to sell because of high taxes. Rather, new subdivision activity is occurring on low lying, marginal land with very poor soil characteristics. It is such junk land that is being developed to accommodate "spillover" mobile home growth.

There is also pressure for development of soundfront and Outer Banks property for retirement and second homes. Much of the most desireable soundfront property is not available, and like the

"spillover" growth areas, there is considerable speculation in marginal and environmentally sensitive areas. The thousands of lots platted on the Outer Banks portend a major "change" in land "use" over the next few years.

(Source: 3)

Hazard Areas: Man-Made (Source:4)

Currituck County leases from the State, for $1.00 per year, a large tract of land on U. S. 158. The property includes a 150' x 4000' concrete flight strip. This is the only man-made "hazard area" in the county. However, the strip is located in open country not in the immediate path of intensive development and thus is not considered to be a true hazard.

There are no plans for expansion of the facility in the near future though the availability of land for expansion and for development of airport-oriented uses is a long-term possibility.

Hazard Areas: Natural

Ocean Erodible Areas: These are defined as the areas above mean high water where excessive erosion has a high probability of occurring. The landward extent of this area should be determined by plotting a twenty-five year recession line using the best scientific data available.

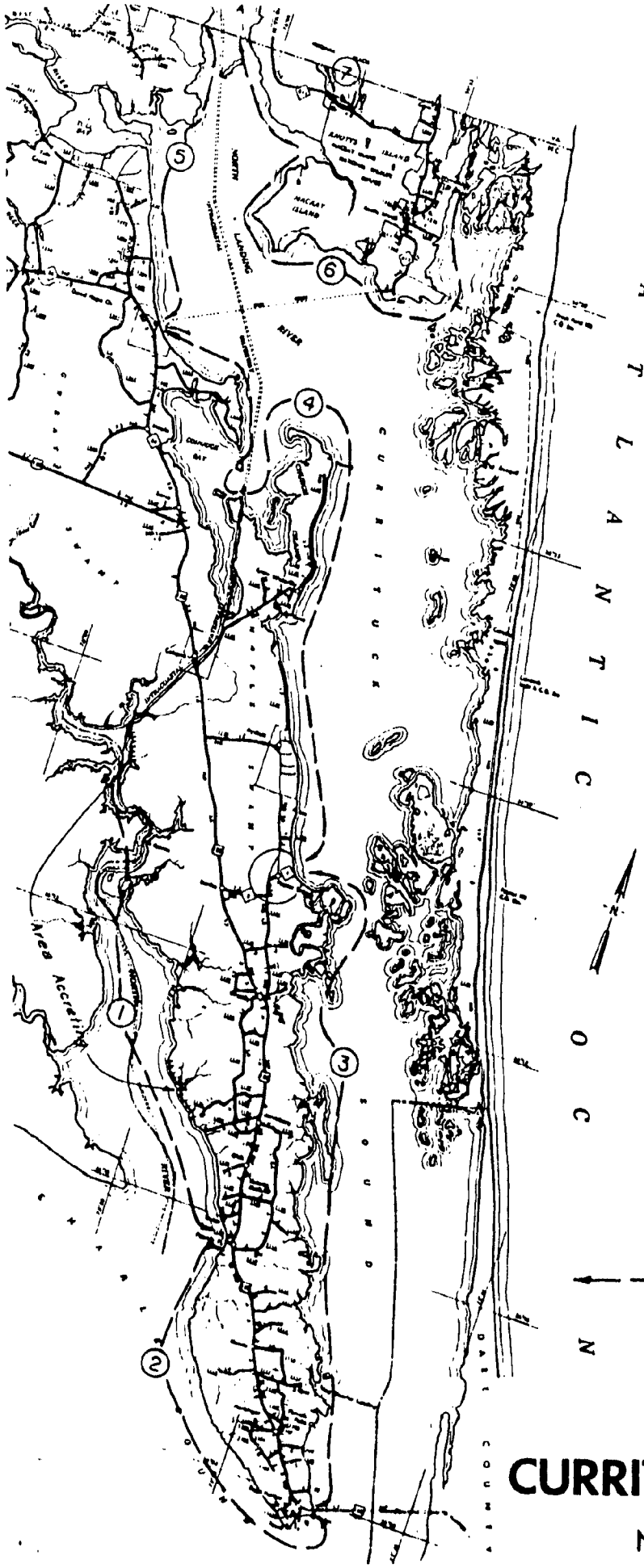
Ocean erodible areas are extremely dynamic lands, susceptible to being displaced - permanently submerged - by water.

The twenty-odd miles of Outer Banks ocean front is subject to erosion. The recommended recession line here ranges from 40 - 100 feet landward of the seaward toe of the foredune. (Source; 5)

Estuarine Erodible Areas: These are defined as the areas above ordinary high water where excessive erosion has a high probability of occurring. The landward extent of this area should be determined by plotting a twenty-five year recession line using the best scientific data available.

Like ocean erodible areas estuarine, sound, and river shores are vulnerable to erosion. Development here is likewise subject to damage by erosion unless special development standards and preventative measures are employed.

Erosion/accretion data have been collected for a 123 mile reach of the Currituck mainland (including Sound and North River shore) and Knotts Island. For the 31 year period of observation only 3.1 miles of shoreline along the North River were found to be accreting. From these data, recession lines for the next twenty-five years are calculated as follows:



LEGEND

① REACH

CURRITUCK COUNTY

NORTH CAROLINA

Reach #1 North River

Intracoastal waterway to Paradise Point...30.4 feet
(Net loss along reach; minor accretion)

Reach #2 North River

Paradise Point to Wright Memorial Bridge..43.8 feet

Reach #3 - Currituck Sound

Wright Memorial Bridge to Poplar Branch...23.5 feet

Reach #4 Currituck Sound

Poplar Branch to Currituck Courthouse ...29.4 feet

Reach #5 Currituck Sound

Currituck Courthouse to Virginia line.....19.7 feet

Reach #6 Currituck Sound

Knotts Island circumferential.....27.7 feet

(Source: 6)

Soil Limitations (Source: 7)

Limitations for Building Foundations: The principal limitation for foundations is the extreme depth to bedrock. The county's soils may be divided into two broad groups: sandy and mucky, both of which run very deep. Neither is suitable for the foundations of large buildings without the use of pilings.

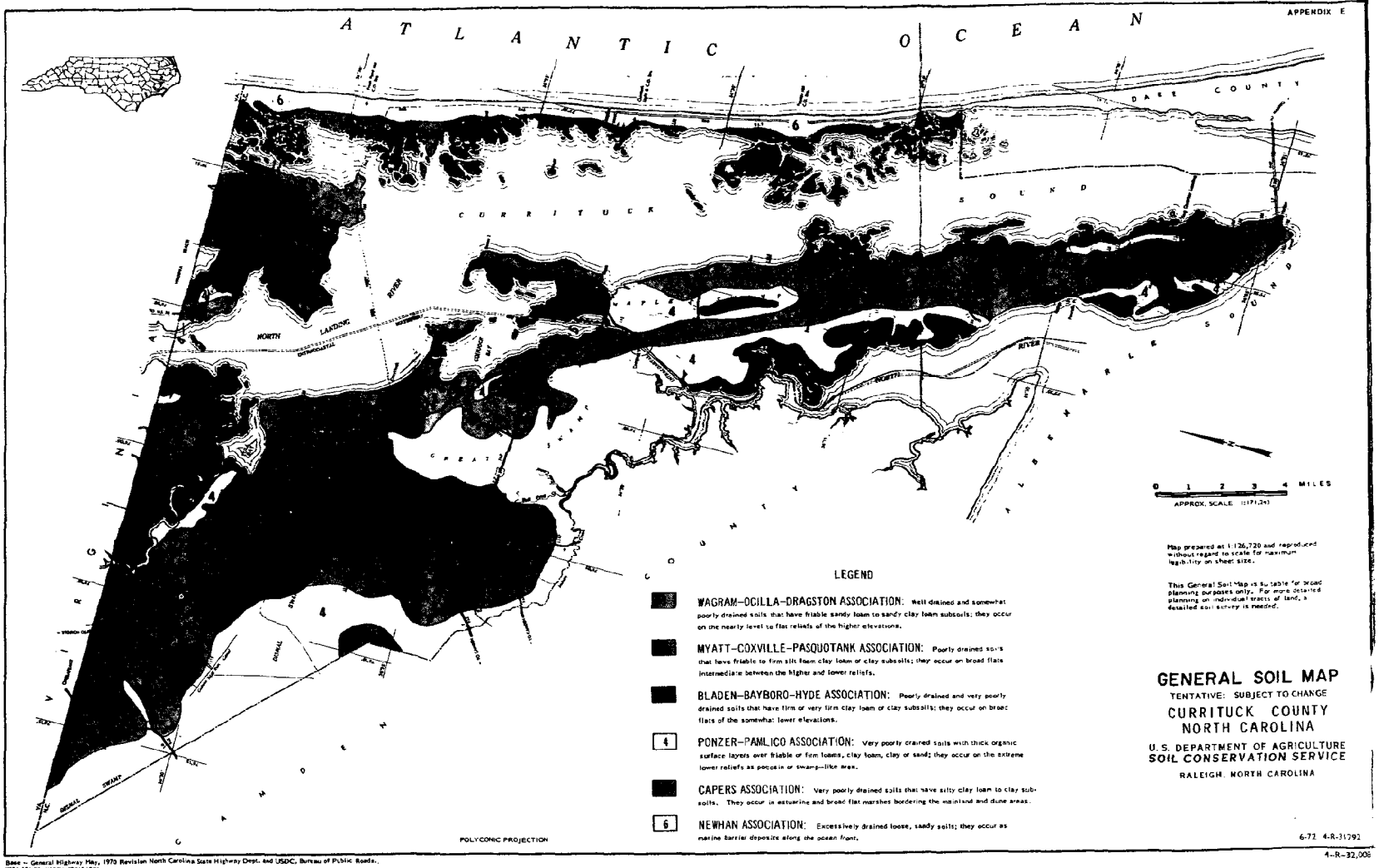
A small area of the Outer Banks has soil with high shrink-swell potential, presenting the possibility of cracking masonry foundations.

Shallow Soils: As noted above, Currituck's soils run very deep. No part of the county is known to have a problem of rock at or near the surface.

Poorly Drained Soils: The dune and beach parts of the Outer Banks are very well drained. The marsh areas, however, are very poorly drained as in most of Knotts Island.

The mainland contains large areas of somewhat poorly drained soils. These are concentrated in the north central part of the county and west of the ridge running the length of the mainland. Well drained soils form part of the ridge and lie along the lower eastern shore of the peninsula. Muck or peat soils underlie the Dismal Swamp in the northwestern corner of the county. These soils are very poorly drained as are the mixed alluvial soils that are found in the extensive swamp areas on the western side of the mainland.

Limitations for Septic Tanks: Approximately seventy percent of Currituck's land area is covered with soil associations rated as having "severe" limitations for septic tanks. This area includes soils which have low percolation rates; and soils which have little filtering effect on the effluent which seeps directly into and pollutes the ground water supply. Soil associations with only moderate limitations for septic tanks are found along the east side of Knotts Island, near Moyock, along the sound shore from Tull Bay to Coinjock Bay, the east side of Church Island, and along the central ridge of the lower peninsula.



LEGEND

WAGRAM–OCILLA–DRAGSTON ASSOCIATION: Well drained and somewhat poorly drained soils that have friable sandy loam to sandy clay loam subsoils; they occur on the nearly level to flat reliefs of the higher elevations.

MYATT–COXVILLE–PASQUOTANK ASSOCIATION: Poorly drained soils that have friable to firm silt loam clay loam or clay subsoils; they occur on broad flats intermediate between the higher and lower reliefs.

BLADEN–BAYBORO–HYDE ASSOCIATION: Poorly drained and very poorly drained soils that have firm or very firm clay loam or clay subsoils; they occur on broad flats of the somewhat lower elevations.

4 PONZER–PAMLICO ASSOCIATION: Very poorly drained soils with thick organic surface layers over friable or firm loams, clay loam, clay or sand; they occur on the extreme lower reliefs as pocosin or swamp–like areas.

CAPERS ASSOCIATION: Very poorly drained soils that have silty clay loam to clay subsoils. They occur in estuarine and broad flat marshes bordering the mainland and dune areas.

6 NEWHAN ASSOCIATION: Excessively drained loose, sandy soils; they occur as marine barrier deposits along the ocean front.

Map prepared at 1:126,720 and reproduced without regard to scale for maximum legibility on sheet size.

This General Soil Map is suitable for broad planning purposes only. For more detailed planning on individual tracts of land, a detailed soil survey is needed.

GENERAL SOIL MAP

TENTATIVE: SUBJECT TO CHANGE

CURRITUCK COUNTY
NORTH CAROLINA

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
RALEIGH, NORTH CAROLINA

6-72 4-R-31792

Base – General Highway Map, 1970 Revision North Carolina State Highway Dept. and USDC, Bureau of Public Roads.
USDA-SCS-FT WORTH, TEXAS 1972

Soil Interpretations
General Soil Map

APPENDIX F

CURRITUCK COUNTY, NORTH CAROLINA

% in County	Soil Associations	% in Assoc.	LIMITATIONS FOR: Dwellings with: Sewerage Systems	Dwellings with: Septic Tank Filter Fields	Recreation: Camp Sites	Recreation: Picnic Areas	Recreation: Intensive Play Areas	Recreation: Light Industries	Recreation: Roads and Streets	SUITABILITY FOR: General Agriculture 3/	General Agriculture 4/	Woods	Pasture
15%	1. WAGRAM-OCILLA-DRAGSTON												
	Wagram	40%	Slight	Slight	Mod.Surf.Text.	Mod.Surf.Text.	Sev.Surf.Text.	Mod. Sl	Slight	Good	Fair	Fair	Fair
	Ocilla	25%	Mod.wt.	Sev.wt.	Mod.wt.	Mod.wt.	Mod.wt.	Mod.wt.	Mod.wt.	Good	Fair	Fair	Fair
	Dragston	20%	Mod.wt.	Mod.wt.fl.	Mod.traf.wt.	Mod.traf.wt.	Mod.traf.wt.	Mod.BS TSC	Mod.TSC Fl.	Good	Good	Fair	Fair
35%	2. MYATT-COXVILLE-PASQUOTANK												
	Myatt	50%	Sev.wt.fl.	Sev.wt.perc. fl.	Sev.fl.	Sev.fl.	Sev.fl.	Sev.wt.fl.	Sev.wt.	Poor	Good	Good	Good
	Coxville	25%	Sev.wt.fl.	Sev.wt.fl.perc	Sev.fl.	Sev.fl.	sev.fl.	sev.wt.fl.TSC	sev.fl.	Poor	Good	Good	Good
	Pasquotank	15%	Sev.wt.	Sev.wt.fl.	Sev.traf.wt.	Sev.traf.wt.	Sev.traf.wt.	Sev.wt.fl.	Sev.fl.	Poor	Good	Good	Good
5%	3. BLADEN-BAYBORO-HYDE												
	Bladen	55%	sev.wt.	sev.wt.fl.perc	sev.fl.	sev.fl.	sev.fl.	sev.fl.wt.TSC	Sev.fl.	Poor	Good	Good	Good
	Bayboro	15%	sev.wt.	sev.wt.fl.perc	sev.fl.	sev.fl.	sev.fl.	sev.fl.wt.TSC	sev.fl.	Poor	Good	Good	Fair
	Hyde	5%	sev.wt.	sev.wt.fl.	sev.fl.	sev.fl.	sev.fl.	sev.fl.wt.TSC	sev.fl.TSC	Poor	Good	Good	Fair
28%	4. PONZER-PAMLICO												
	Ponzer (Muck over loam)	75%	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	Poor	Poor	Fair	Poor
	Pamlico(Muck over sand)	10%	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	Poor	Poor	Fair	Poor
12%	5. CAPERS (Marsh)												
	Capers	98%	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	sev.wt.fl.	Poor	Poor	Poor	Poor
5%	6. NEWHAN(Dune Sand)												
	Newhan	90%	sev. LFC	Sev. LFC	sev.blow.sand	sev.blow sand	sev.blow.sand	sev.fl.	sev.fl.	Poor	Poor	Poor	Poor

DEFINITIONS OF SOIL LIMITATIONS

None to Slight - Soils have properties favorable for the rated use. Limitations are so minor that they can be easily overcome. Good performance and low maintenance can be expected from these soils.

Moderate - Soils have properties moderately favorable for the rated use. Limitations can be overcome or modified with planning, design, or special maintenance.

Severe - Soils have one or more properties unfavorable for the rated use. Limitations are difficult and costly to modify or overcome, requiring major soil reclamation, special design, or intense maintenance.

Abbreviations for Limiting Factors:

Fl - Flood hazard
Wt - Water Table
Traf - Trafficability
Sh-Sw - Shrink-swell potential
R- Rock
Perc - Percolation rate
Cor - Corrosion potential
BS - Bearing Strength
LFC - Low Filter Capacity
TSC- Traffic supporting capacity
Prod - Productivity
AWC - Available water capacity

Slopes > 10% impose limitations; 10-25% - Mod.; 25%+ - Sev.

Slopes > 10% impose limitations; 10-15% - Mod.; 15%+ - Sev.

Slopes > 6% impose limitations; 6-10% - Mod.; 10%+ - Sev.

Slopes > 10% impose limitations; 10-25% - Mod.; 25%+ - Sev.

Slopes > 6% impose limitations; 6-10% - Mod.; 10%+ - Sev.

Slopes > 10% impose sev. limitations

Slopes > 25% impose sev. limitations

Abbreviations for degree of limitations:

Slt. - Slight ; Mod. - Moderate ; Sev. - Severe

1/ Structures whose footings are in subsoil.
2/ Refers to roads and streets that have subsoil.
3/ Tobacco- Peanuts
4/ Corn, soybeans, small grain & truck

6-72 4-R-31792

Sources of Water Supply (Source:8)

Public Water Supply Watersheds: There are no public water systems in Currituck County.

Wellfields: There are no public well fields in the County.

Groundwater Recharge Areas: A lithic unit capable of storing and transmitting usable quantities of water to wells or springs is called an aquifer. The two major classes of aquifer are: water-table and artesian. Water in the water table aquifer ("non-artesian") is free to rise and fall in response to changes in precipitation, transpiration and tidal levels. Artesian water, however, is not free to rise and fall, owing to impermeable confining layers. Areas in which aquifers are replenished are called "recharge areas."

Water table aquifers are recharged in the Currituck area by rainfall and also by a small upward seepage of artesian water from the underlying Yorktown Formation. The Yorktown is the principal source of water for wells in Currituck though some is taken from the water table aquifer. The Yorktown is an enormous formation underlying much of the southeastern seaboard. It is recharged in areas where the water table stands higher than the Yorktown's artesian pressure heads by downward seepage from the water table aquifer.

In Currituck County two distinct recharge areas are thus identified. These are located on the mainland: the first lying immediately west of Coinjock Bay, the other--slender and elongated--generally follows the central ridge of the peninsula south of the Intercoastal Waterway.

Coastal Wetlands (Source: 9, 10)

Coastal wetlands are defined by the N. C. General Statutes as "any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Salt marshland or other marsh shall be those areas upon which grow some, but not necessarily all, of the following salt marsh and marsh plant species: Smooth or salt water Cordgrass (Spartina alterniflora); Black Needlerush (Juncus roemarianus); Glasswort (Salicornia spp.); Salt Grass (Distichlis spicata); Sea Lavender (Limonium spp.); Bulrush (Scirpus spp.); Saw Grass (Cladium jamicense); Cat-Tail (Typha spp.); Salt Meadow Grass (Spartina patens); and Salt Reed Grass (Spartina cynosuroides)." Included in this statutory definition of wetlands is "such contiguous land as the Secretary of NER reasonably deems necessary to affect by any such order in carrying out the purposes of this Section."

Marshes are among the coast's most fragile biomes and may be designated as Areas of Environmental Concern for two reasons: (1) Marshes are utilized as nursery areas by many animals that are harvested in commercial and sports fisheries; (2) marshes are productive natural areas upon which many animals depend for food. Scientists estimate that about sixty-five percent of the commercial catch is made up of species which depend on marshes and estuaries--such as Currituck Sound--during some phase of their life cycle. The productivity of marshes is apparent by simple observation: The areas of tall green grass look like rich meadows, and, upon careful study, turn out to be more productive than practically all meadows, and all but the most productive of cultivated crops. The food produced in these marshes is not eaten by herds of cows, but rather by the marine and estuarine animals that provide the fisherman's catch.

Some twenty thousand acres of Currituck Sound shore are covered by fresh marshes ("fresh" because of the low salinity of the Sound). Nearly all the marsh land is considered "shallow", flooded periodically by wind tides to a depth of one to twelve inches. A very small area of "deep" marsh is flooded year-round at depths of six to twenty inches.

Currituck's marshland contributes to the detritus supply necessary to the estuarine system which is essential to the State's commercial and sports fishery industry.

The marsh offers quality wildlife and waterfowl habitat depending on the biological and physical conditions of the marsh. The vegetative diversity in the marsh usually supports a greater diversity of wildlife types than the limited habitat of the low tidal (salt) marsh. Currituck, for instance, is one of the two most important wintering grounds for migratory waterfowl in the state (the other is Hyde County). Thousands of ducks spend the winter on the Sound and in the marshes while snow geese stop to feed in the Mackay Island marsh on their way to wintering grounds further down the coast. The marsh also supports populations of deer, muskrat, mink, otter, rabbit, raccoon, and nutria.

The marsh also serves as an important deterrent to shoreline erosion especially in those marshes containing heavily rooted species. The dense system of rhizomes and roots of Juncus roemerianus are highly resistant to erosion. In addition, the marsh is an effective sediment trap.

The issues upon which development decisions should be based follow from knowledge of the environmental characteristics and extent of marshes. First it should be clear that we need not preserve every blade of grass on every marsh. The benefits of marshes depend upon the aggregate acreage--one should be able to reduce the acreage by a negligible amount and reduce the benefits of that acreage by an equally negiligible amount. Thus we must not absolutely preclude all marsh development. On the other hand, if we accept a 10% reduction in marshes each year, we will have no marshes in only a decade. Thus in considerations of marsh development, as in most things, there are no simple solutions, only intelligent choices.

One of the choices which must be made soon is apparent from the definition: "Included in this statutory definition of wetlands in 'such contiguous land as the Secretary of NER reasonably deems necessary to affect by any such order in carrying out the purposes of this Section.' " While much effort has gone into the mapping and written descriptions of wetlands themselves, virtually no effort has yet been made to define the kinds of "contiguous lands" which might be included as part of the AEC. Currituck County recognizes the complexity of the marsh bio-system and, therefore, that contiguous non-marshland may need to be regulated in order to protect the marshes themselves. However, reliance upon the reasonableness of the Secretary of NER is unsatisfactory legislation for there exists at least the potential for law

suits against the county and state alleging the failure of either to provide equal protection. Failure to protect equally would almost surely be by accident through oversight by the Secretary's staff (or the local permit officer) if such contiguous lands are to be designated on a case-by-case basis rather than by carefully drafted definition. Further, few if any counties, including Currituck, are equipped to recommend the designation (or exclusion) of such lands as requested by the Coastal Resources Commission.

The Outer Banks: Sand Dunes, Ocean Beaches, Shoreline

Sand dunes are barren, partly vegetated deposits of windblown sand. Although the largest, so-called barrier dunes, occur immediately inland from the ocean beach, dunelands (lands influenced by windblown sand deposition) extend from the inland base of the barrier dunes to the line of estuarine water on the sound side. Dunes and dunelands comprise a major portion of the Outer Banks and barrier islands and constitute a protective barrier between the ocean and the sounds, marshes and mainland. Although dunes and dunelands are found along the entire coast, the largest dunes occur in Dare and Currituck Counties.

Ocean and estuarine beaches and shorelines occur along the entire coast. These are land areas without vegetation, consisting of unconsolidated soil material that extends landward from the mean low tide to a point where vegetation occurs or there is a distinct change in predominant soil particle size or there is a change in slope or elevation which alters the physiographic land form, and thus constitutes the transition into dunes or wetlands.

The Outer Banks portion of Currituck County is a slim, elongated penninsula jutting southward from Virginia Beach into Dare County. Slightly less than 8800 acres in area, they are 23 miles long and range in width from less than 2,000 feet to more than one mile. Approximately 6,000 years old, the banks were the product of wind and sand and water. Theories concerning their origin vary. They may have been born when a mainland ridge was surrounded by rising sea levels. It is possible that they were generated by the elongation of a coastal sand spit. Another possibility is that they were formed by the gradual rise of an offshore bar. However, it is clear that they envolved into a shifting string of barrier islands.

The Currituck Banks are composed of highly mobile sand particles. Constantly eroded and redeposited by the forces of wind and moving water, the particles form a matrix of shifting beaches, dunes, sand hills, plains, and wetlands. Though the strand's mean elevation is only six feet above sea level, a number of the migrating hills tower 75 feet above their surroundings. Inlets have periodically pierced Currituck's length, only to be reclosed by sands setting from longshore currents. Still evident on the banks is oceanic overwash, a process which drives them slowly landward. Vegetation is the stabilizing element in this dynamic environment. Grasses, shrubs, and scrub forest tracts capture the migrating sands, and the plants' root systems stabilize the porous soils, reinforcing dune systems. The plants' distribution is governed by wind exposure, water supply, and the sands' nutrient supply and salt content.

Several areas of the banks are covered by shallow surface waters. In addition, a fresh water lens underlies the strand in sand and clay deposits. Intensive use of this lens can cause salt water intrusion.

The Currituck Banks topography is difficult to categorize. Nevertheless a highly idealized transect, though inaccurate, can aid in understanding its components. The shoreface and berm form the first sectors in this system. The shoreface is subject to systematic tidal flooding, while the berm lies above the mean high tide level. Three dune areas follow. The final component in the system is the shore at the interface of the banks and the sound: the marsh area.

Some areas of the Currituck strand are undergoing extensive erosion. Winter storms steepen and narrow the beaches while summer's gently breaking swells allow sand deposition, widening the bern and shoreface, and giving them a more gentle slope.

The Currituck foredune is not continuous and is poorly vegetated. Poor vegetation is characteristic of much of the banks and can be attributed to stock grazing which has occured in the past. (Source: 11)

* * *

The Outer Banks are thus truly "fragile areas" within themselves and their "health" has a direct bearing upon other fragile elements of the county's geography. Without public action, the delicate balance between these elements is seriously imperiled by the enormous pressures to develop the Banks. Currituck County has taken major steps to insure that development here is undertaken with due regard for at least the most-readily quantifiable environmental considerations. These county actions include adoption of a zoning ordinance, subdivision regulations, a dune protection ordinance, and rigorous enforcement of the state building code and state regulations dealing with water supply, septic tanks, and solid waste disposal.

Estuarine Waters (Source: 12)

Estuarine waters are defined as, "all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Conservation and Development filed with the Secretary of State entitled 'Boundary Lines, North Carolina Commercial Fishing-Inland Fishing Waters, revised March 1, 1965,'" or as it may be subsequently revised by the Legislature.

Estuaries are among the most productive natural environments of North Carolina. They not only support valuable commercial and sports fisheries, but are also utilized for commercial navigation, recreation, and aesthetic purposes. Species dependent upon estuaries such as menhaden, shrimp, flounder, oysters and crabs make up over 90 percent of the total value of North Carolina's commercial catch. These species spend all or some part of their life cycle in the estuary. The high level of commercial and sports fisheries and the aesthetic appeal of coastal North Carolina is dependent upon the protection and sustained quality of our estuarine areas.

Estuarine waters in Currituck County include the Currituck Sound, Albemarle Sound, and parts of the North and the Northwest Rivers. These waters total nearly two hundred square miles.

Public Trust Water

The major public trust waters in Currituck County include the Albemarle and Currituck Sounds, the North River, and the Northwest River.

Technically, public trust water is any water which meets the following definition:

(1) All waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of State jurisdiction;
(2) All natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark;
(3) All navigable natural bodies of water and lands thereunder to the mean high water mark or ordinary high water mark as the case may be, except privately owned lakes to which the public has no right of access;
(4) All waters in artificially created bodies of water in which exists significant public fishing resources or other public resources, which are accessible to the public by navigation from bodies of water in which the public has rights of navigation;
(5) All waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication or any other means.

In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered: (i) the use of the body of water by the public; (ii) the length of time the public has used the area; (iii) the value of public resources in the body of water; (iv) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water; (v) whether the creation of the artificial body of water required permission from the State; and (vi) the value of the body of water to the public for navigation from one public area to another public area.

For purposes of this definition the following definitions shall apply:

(1) Mean High Water Mark means the line on the shore established by the average of all high tides. It is established by survey based on available tidal datum. In the absence of such datum, the mean high water mark shall be determined by physical markings or comparison of the area in question with an area having similar physical characteristics for which tidal datum is readily available.

(2) Navigable means navigable-in-fact.
(3) Navigable-in-fact means capable of being navigated in its natural condition by the ordinary modes of navigation including modes of navigation used for recreational purposes. The natural condition of a body of water for purposes of determining navigability shall be the condition of the body of water at mean high water or ordinary high water as the case may be, and the condition of the body of water without man-made obstructions and without temporary natural obstructions. Temporary natural conditions such as water level fluctuation and temporary natural obstructions which do not permanently or totally prevent navigation do not make an otherwise navigable stream non-navigable.
(4) Ordinary High Water Mark means the natural or clear line impressed on the land adjacent to the waterbody. It may be established by erosion or other easily recognized characteristics such as shelving, change in the character of the soil, destruction of terrestrial vegetation or its inability to grow, the presence of litter and debris, or other appropriate means which consider the characteristics of the surrounding area. The ordinary high water mark does not extend beyond the well defined banks of a river where such banks exist.

This incredibly cumbersome definition seems to say that public trust waters include all surface waters except those in privately-owned lakes up-stream of the point of impoundment (e.g. farm ponds at the head of a water shed). In other words, approximately forty percent of the county's geographic area is occupied by public trust water and subject to all regulations appertaining to such waters.

Currituck Sound (Source: 13)

Because of its biological importance, Currituck Sound deserves special attention here. The sound covers approximately 166 square miles. It is of very low salinity and is fringed with marsh land. Formerly saline, it has become a fresh water body since the closing of the Currituck Banks in the 1800's. An extensive and productive bass fishery has developed, and its marshes are a critical link in the Atlantic Flyway, providing food for great numbers of migratory water-fowl. It is probably the most productive hunting and fishing area in North Carolina, and it serves as a rookery for many shore birds.

It is fed by the Northwest and North Rivers, numerous farm drainage ditches, and by Virginia's Back Bay. It receives much swamp drainage. Much of this influx is slightly acid and low in oxygen.

The sound and its marshes form a complex community of interdependent plants and organisms in an aquatic environment. Through an intricate system of cycles, the community members share vital resources such as nutrients and energy. The sun is the ultimate energy source, while decaying marsh vegetation and water grasses are the supplier of nutrients.

The mechanism through which nutrients and energy are shared is the food chain. Plants utilize the sun's energy, in the formation of organic matter. These plants are in turn eaten by herbivorous animals, while flesh-eating carnivores occupy the final links in the chain.

Energy flows through the system in only one direction. Thus the sound community requires a continuous input of sunlight. Nutrients, however, must often be recycled. Decay organisms, primarily bacteria and fresh water worms, provide this feed back mechanism, breaking down organic debris into forms utilized by the plant community.

Currituck is a very special sound. It is low in salinity. It is not affected by lunar tides. And it is very shallow. This uniqueness, however, makes it especially vulnerable to external influences.

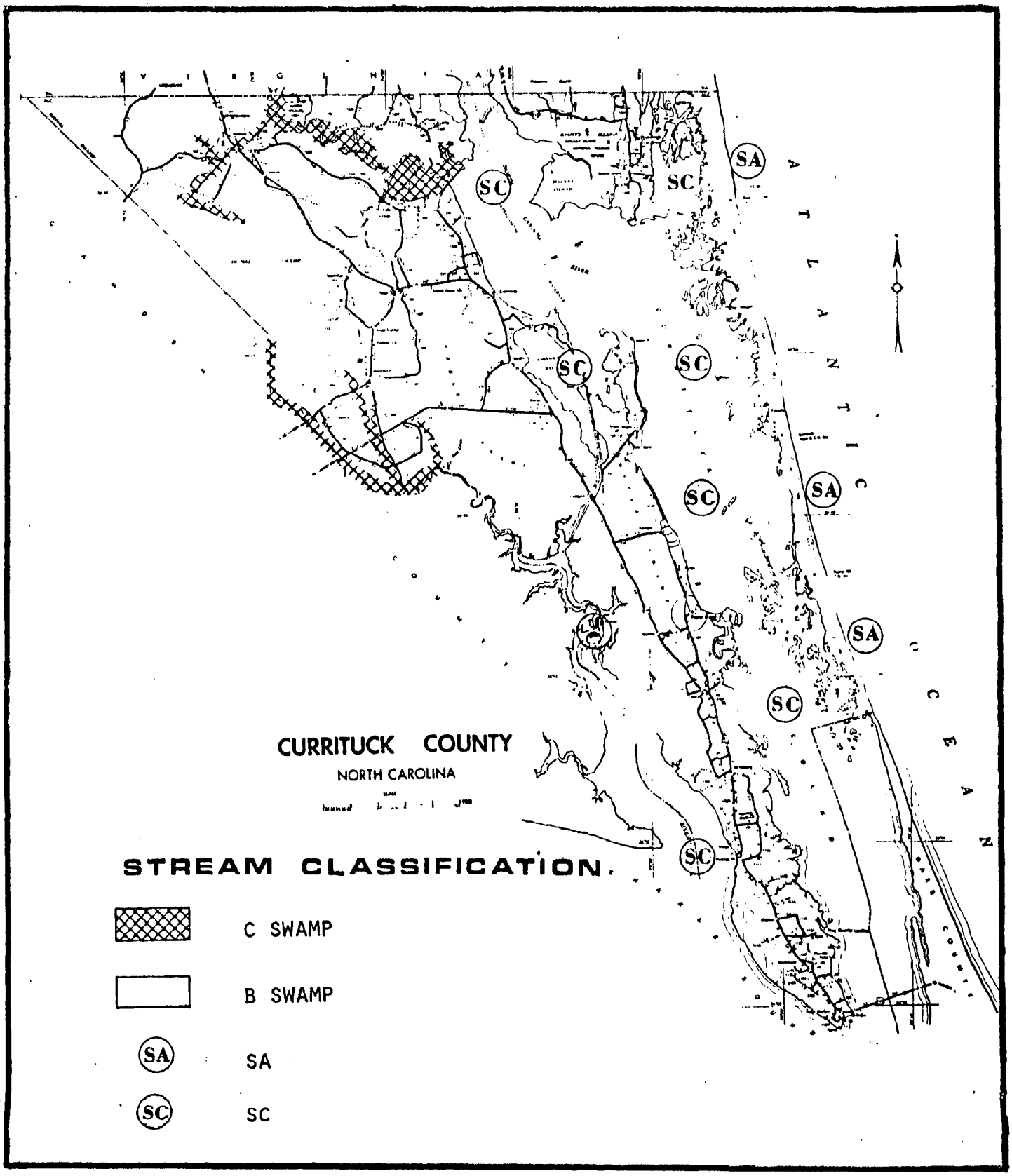
The sound has been abused and has reacted accordingly. Extensive dredging has induced high turbidity and harmful siltation in its waters. Sporadic wind tides are insufficient to flush this turbidity from the sound and serve only to resuspend settled silt, thus increasing the water's murkiness. The sound's all important grasses have been adversely affected.

Salt water is an effective remedy for excessive turbidity, floculating suspended sediments and causing them to settle to the bottom. Thus, many persons have advocated returning the sound to a saline condition. These persons also contend that a salt sound would be a greater benefit to the Currituck County economy.

The recent intrusion of fresh water milfoil into the sound has strengthened their argument. The dense milfoil patches have hindered recreation and altered the successful bass fishing methods. Salt water effectively halts the reproduction of milfoil.

The Currituck salt versus fresh controversy is complex, involving economy and ecology. The sound's present salinity is 4 percent sea strength, uncomfortably close to the 8 percent figure which inhibits bass reproduction. Moreover, the city

of Virginia Beach daily pumps huge amounts of salt water into Back Bay, thereby increasing Currituck's salt content. Too, the sound is bordered by farmland and therefore is subject to siltation and receipt of nutrient runoff (e.g. fertilizer).


SC
SA
ATLANTIC OCEAN
CURRITUCK COUNTY
NORTH CAROLINA
STREAM CLASSIFICATION.
C SWAMP
B SWAMP
SA
SC

Complex Natural Areas (Source: 14)

Complex natural areas are lands that support native plant and animal communities and provide habitat conditions or characteristics that have remained essentially unchanged by human activity. Such areas are surrounded by landscapes that have been modified but that do not drastically alter the conditions within the natural areas or their scientific or educational value. Such areas will be determined by the Commission, after consideration of written reports or testimony of competent experts, to be rare within a county or to be of particular scientific or educational value.

Complex natural areas provide the few remaining examples of conditions that existed within the coastal area prior to settlement by Western man. Often these natural areas provide habitat conditions suitable for rare or endangered species or they support plant and animal communities representative of pre-settlement conditions. These areas help provide an historical perspective to changing natural conditions in the coastal area and together are important and irreplaceable scientific and educational resources.

In a broad but real sense, most of Currituck County is a complex natural area: the vast expanse of water, the Outer Banks, the wetlands. Coastal wetlands (fresh marshes) are discussed elsewhere in this report: this section deals with two other wetland types, bogs and wooded swamps. A close relationship exists between these lands and the areas that sustain remnant species (discussed below) for the swamps and bogs are the preferred--indeed, necessary--habitat for many rare and endangered plant and animal species.

Bog land, nearly 14,000 acres of it, occurs in the northwest corner of the county and extends into Camden County. Nomenclature is confusing for the bog is known as the Dismal Swamp (wooded swamps are discussed below). Bog land is the result of poor drainage. Large areas of the Dismal Swamp are higher in elevation than the surrounding land, but the high water retention capabilities of the soil and the lack of sufficient drainage ways have acted to create the wetland. Bog soils are usually moist to water-logged and are often flooded in the winter. Over time, bogs become overlaid with a layer of organic soil formed by decaying plants and plant materials. It is not uncommon for fallen trees to become embedded in the muck. With proper drainage, bog land can be converted to fertile farm land, although the range of suitability for crops is somewhat limited. Some tracts of bog in Currituck are being drained and converted to farm land or to more extensive use as timber land. Principal tree species include pond pine and loblolly pine. It is probable that much of the existing bog land in the county will be used for one of these two purposes in the future. Bog used for timber land under intensive management could still provide refuge for the big

game, deer and bear, found in the county. However, bog converted to agricultural use would have less value for wildlife purposes: in fact, it would be deleterious to certain wildlife communities, particularly deer and bear.

Wooded swamps in the county cover approximately 22,000 acres in the lowlying areas bordering the streams and water courses. The largest swamp areas adjoin the North River. They are often flooded, especially in the winter, by more than a foot of water. These areas tend to dry up during the growing seasons, when growing plants greatly increase the demand for the available water. The dense shade of trees (gum, cypress, and oak) growing in the swamps restricts the growth of aquatic plants that serve as food for ducks and muskrats. Because swamps lie in what is usually termed flood plain areas, they have very little potential usefulness as agricultural lands. They serve as refuge areas for a variety of wildlife and are excellent areas for growing certain types of timber. Modern engineering practices make it possible to fill swamps and convert such land to other uses, but the expense is very great and there is little demand for filling swamp land.

Currituck will probably retain its swamp land intact for many years to come. In time, it is probable that swamps will be managed much more extensively for timber purposes than they have been in the past. The land will continue to provide refuge for wildlife in keeping with its present function. More intensive forest management is not likely to decrease the value of swamps for wildlife. With some planning, proper forestry practices could actually enhance their usefulness as refuge areas.

Areas that Sustain Remnant Species (Source: 15)

Areas that sustain remnant species are those places that support native plants or animals, rare or endangered, within the coastal area. Such places provide habitat conditions necessary for the survival of existing populations or communities of rare or endangered species within the county. Determination will be by the Coastal Resources Commission based upon accepted lists published by the state or federal government and written reports or testimony of competent experts indicating that a species is rare or endangered within the coastal area.

The continued survival of certain native plants and animals in the coastal area that are now rare or endangered cannot be assured unless the relatively few well defined areas providing necessary habitat conditions are protected from development or land uses that might alter these conditions. These habitats and the species they support are a valuable educational and scientific resource.

The North Carolina Endangered Species Committee, convened by the Department of Natural and Economic Resources, has compiled a list of endangered plants and animals in North Carolina. The list provides a knowledge of those plant and animal species in North Carolina that are threatened with extinction. In many cases, such as the Venus Fly-trap, Shortia and the alligator, these are species that lend character to our state and that should never be allowed to disappear from our native flora and fauna. In some cases, the threats to the species are not related to man's activities. In others, however, through his destruction of the species' habitat, man is inadvertantly dooming the species to extinction. By identifying species so endangered, and by identifying projects and actions that threaten the species' habitat, State agencies should be able to develop action programs to protect the species and insure their perpetuation. In addition, many of these species are especially useful as living monitors of environmental quality in our state and it is important that they be protected for that reason.

The status of these species in North Carolina is based on the following federal criteria which have been adapted for state uses:

Endangered: An endangered species or subspecies is one whose prospects for survival are in immediate jeopardy. Its peril may result from one or many causes--loss, change, or destruction of habitat; over-exploitation; predation; competition; disease; etc. An endangered species must have help, or extinction and/or extirpation from North Carolina will probably follow.

Rare: A rare species or subspecies is one that, although not presently threatened with extinction, is in such small numbers throughout its range that it may be endangered if its environment worsens. Close watch of its status is necessary.

Undetermined: A species or subspecies of undetermined status is one that has been suggested as possibly endangered, but about which there is not enough information to determine its specific status. More information is needed.

Peripheral: A peripheral species or subspecies is one whose occurrence in North Carolina is at the edge of its natural range and which is rare, endangered, or undetermined within North Carolina although not necessarily in its range as a whole. Special attention is necessary to assure retention in our state's fauna.

* * *

Several species listed below have been observed recently in Currituck County. Others are thought to exist in the county based upon the presence of the species' preferred habitat. The list illustrates both the county's complex biological structure and the need for much more field investigation. As noted, "Areas that Sustain Remnant Species" may be designated "Areas of Environmental Concern" by the Coastal Resources Commission. This class of AEC is surely one of the most important. Such a designation, however, cannot be supported by existing data for all species listed herein. The potential loss of those species, however, is too great a risk to incur by failing to make the designation and concurrently undertaking the required field work.

INVERTEBRATES

SPECIES	RANGE IN N. C.	PREFERRED HABITAT	GENERAL COMMENTS	STATUS
MILLIPEDS				
Onomeris australora (Milliped)	Macon County, Highlands vicinity.		Also found in Georgia.	Endangered.
Pseudopolydesmus paludicolus	Dismal swamp area only.		Endemic to Dismal Swamp, N.C. & Va.	Endangered
MOLLUSKS				
Bivalves-(Fresh-water clams)				
Alasmidonta heterodon (Mollusk:bi-valve)	Wake County,Neuse & Little Rivers; Franklin County, Tar River; Pitt County, Chicod Creek.	Moderately flowing water, gravel, sand, or muddy sand.	Found only in 5 rivers outside of N. C.	Endangered
Catinella pugilator	Currituck County.		Occurs in S. C.	Undetermined

VERTEBRATES

BIRDS				
Pelecanus occidentalis Brown Pelican	Uncommon local resident along coast.	Coastal infringe, sounds & inlets. Nests on low islands.	Nests only in Ocracoke Inlet Production, 1972, about 40 young.	Endangered.

VERTEBRATES con't

SPECIES	RANGE IN N. C.	PREFERRED HABITAT	GENERAL COMMENTS	STATUS
Haliaeetus leucocephalus Bald Eagle	Rare local resident along coast. Rare visitor elsewhere.	Shores of sounds & large lakes.	Last known nesting site in N. C. in now unproductive.	Endangered.
Falco peregrinus Peregrinus Falcon	Uncommon to rare winter visitor along coast.	Coast, mtns. & woodlands. Nests on cliffs.	East U.S. breeding population nearly extirpated.	Endangered.
Sterna albifrons Least Tern	Common-uncommon summer resident.	Coastal fringe. Nests on beaches or low sandy islands.	Terns unceasingly use dredge islands for nesting. Low nesting sites of this species very vulnerable to tides and storms.	Endangered.
Coturnicops noveboracensis Yellow Rail	Uncommon-rare winter resident on coast	Marshes and grassy fields.	Abundance & dist. in N. C. poorly known. Habitat loss is threat.	Rare.
Latterallus jamaicensis Black Rail	Uncommon-rare summer resident on coast and perhaps inland.	Marshes, wet grassy fields.	As above.	Rare.

VERTEBRATES con't

SPECIES	RANGE IN N. C.	PREFERRED HABITAT	GENERAL COMMENTS	STATUS
Gelochelidon nilotica Gull-billed Tern	Rare summer resident along coast.	Coastal fringe.Nests on beaches or low sandy islands.	Terns increasingly use dredge islands for nesting.	Rare.
Passerculus princeps Ipswich Sparrow	Uncommon-rare winter resident along outer banks.	Found in beach grasses on sand dunes.	Outer Banks may become major wintering area due to habitat loss elsewhere.	Rare.
Pandion haliaetus Osprey	Uncommon summer resident along coast.Transient	Large lakes & rivers, & sounds.	N.C. population relatively stable, but populations to north are threatened.	Undetermine
Thalasseus maximus Royal Tern	Fairly common summer resident.	Coastal gringe.Nests on beaches or low sandy islands.	Terns increasingly use dredge islands for nesting.	Undetermine
Limnothlypis swainsonii Swainson's Warbler	Locally uncommon-rare summer resident coastal plain&mountains.	Swamps & rivers floodplains in coastal plain and Rhododendron thickets in mountains.	High nest mortality from natural causes on coastal plain; distribution in mountains poorly known.	Undetermine

VERTEBRATES con't

SPECIES	RANGE IN N. C.	PREFERRED HABITAT	GENERAL COMMENTS	STATUS
Charadrius melodus Piping Plover	Locally uncommon-rare summer resident on coast.	Dry, sandy beaches.	Beach nesting birds like this threatened by heavy recreational use of beaches.	Peripheral-Rare breeder in N. C.
Sterno hirundo Common Tern	Uncommon-rare breeding summer resident.	Coastal fringe. Nests on beaches or low sandy islands.	Terns increasingly use dredge islands for nesting.	Peripheral-Rare breeder in N.C.
Thalasseus sandvicensis Sandwich Tern	Uncommon summer resident.	As above.	As above.	Peripheral-Undetermined in N. C.
MAMMALS				
Sorex longirostris fisheri (Merriam) Southeastern Shrew	Dismal Swamp		Endemic.	Endangered
Blarina telmalestes (Merriam) Swamp Short-tailed Shrew	Dismal Swamp		Endemic.	Endangered

VERTEBRATES con't

SPECIES	RANGE IN N. C.	PREFERRED HABITAT	GENERAL COMMENTS	STATUS
Synaptomys cooperi Helaletes (Merriam) Southern Bog Lemming	Dismal Swamp		N. C., range periphery.	Endangered.
Felis concolor cougar (Kerr) Cougar	Eastern swamps Western mountains.		Endemic	Endangered.

VASCULAR PLANTS

Kalmia cuneata	Coastal plains of N.C. & S.C.	Pocosin	Rare-endemic.	Rare.

Productive and Unique Agricultural Land (Source: 16)

Corn, soybeans, and hogs are presently the county's principal agricultural outputs and are likely to remain so in view of the constantly increasing demand for them.

Soils in the north central part of the county, and in the northwest section adjacent to the Dismal Swamp are particularly well suited to soybean, corn, and Irish potatoe production. Since the Dismal Swamp is actually a bog (a wetland with a highly organic muck soil), there would be an excellent crop potential if parts of it were drained and converted to agricultural use. Muck soils, when properly drained and prepared, can give very high yields of corn and soybeans.

The sandy loam soils in the areas stretching from Barco, near the middle of the peninsula, to Point Harbor, at the southern tip, are quite suitable for growing vegetables and fruits. The most important of these crops were snapbeans, peaches, cabbage, cantaloupes, cucumbers, sweet corn, tomatoes and watermelons. The commercial acreage planted in these crops is expected to decrease because of labor and marketing conditions.

Growing and marketing fresh produce is one of the main commercial retail enterprises in the county. Many residents have taken advantage of the busy tourist flow to and from the Dare County outer banks during the summer season and have erected small roadside produce stands from which they sell produce at retail prices. Often the grower-seller can more than double the return for his crop by retailing it himself rather than by selling it to produce buyers. The gross return from truck crops is almost equal to that of either soybeans or corn. However, the acreage used for truck crop production is less than one-fifth the amount used for the two major crops.

Agricultural workers and farmers expect a modest increase in the production of truck crops in Currituck for roadside marketing. The main reason is that the available market is relatively unlimited. As it is currently operated, the market serves primarily tourists and local residents. Very few farmers sell their produce to commercial wholesalers, and very little contract farming is done. Contract farming offers the best possibilities for a large increase in commercial truck crop production. If vegetable processing is begun in the

general region of which Currituck is a part then farmers in the county might find it profitable to enter into contractual arrangements to help provide part of the needed vegetable supply. At the present time, however, the acreage devoted to these crops will probably increase as a function of the increase in tourist traffic using the county.

Potentially Valuable Mineral Sites (Sources: 17, 18)

The mineral resources of Currituck County are few. Small quantities of titanium oxide, used in paint manufacture occur along the shore of the Currituck and Albemarle Sounds. Because of their small quantity and low grade, they have not attracted commercial interests.

Currituck has large quantities of a very fine sand which, at present do not seem to be of much value to industry. Gross sales of sand in 1973 amounted to a modest $13,000.

There are large quantities of peat in the Dismal Swamp area, but because it is so plentiful in the U. S. and because the demand is so meager, it is not thought to be profitable at the present time to process and sell it.

Publicly Owned Forests, Parks, etc. (Source: 19)

The 7,000 acre Mackay Island National Wildlife Refuge is located on Knott's Island in the Currituck Sound. It is owned and operated by the Bureau of Sports Fisheries and Wildlife of the U. S. Department of the Interior.

The North Carolina Wildlife Resources Commission operates the North River and Northwest River Wildlife Management Areas on leased land. These occupy several thousand acres of land. The Commission also operates two water access (boat launching) areas: one near Corolla on the Sound side of the Outer Banks; the other at Coinjock.

There are several commercial camping grounds in the county and numerous duck blinds.

The County itself operates no recreation facilities other than those which are part of its public school property.

Capacity of Existing Community Facilities

Water and Sewer Service: There are no public water or sewer systems in Currituck County.

The two existing sewer systems were built by the developers of Universal Trailer Park and Walnut Island subdivision. Service is restricted to these developments. Thus, the capacities of these systems are constraints only to the expansion of the developments they serve.

There are four privately-owned water systems in the county. These serve Universal Trailer Park, Walnut Island, Tulls Bay Colony and Wedgewood Lakes subdivisions. The capacities of these, too, are constraints only upon the expansion of the developments they serve.

The design capacities and degree of present utilization of water and sewer systems is shown below:

Sewage Treatment

Facility	Design Capacity	Present Use
Universal Park	100,000 GPD	No records kept*
Walnut Island	Collection system only: no treatment, effluent is collected from system by operator and trucked off-site for disposal at an unknown point.	

*By state agencies

Source: N. C. Dept. of Natural and Economic Resources

Water Supply

Facility	Design Capacity*	Present Use
Universal Park		No records kept**
Walnut Island	105 gpm	No records kept
Tulls Bay Colony	45 gpm	No records kept
Wedgewood Lakes	84 gpm	No records kept

*Well yield
**By state agencies

Source: N. C. Dept. of Natural and Economic Resources

Primary Roads (Source: 20)

Currituck County's primary road system consists of U.S. 158, N. C. 3, N.C. 34, and N.C. 168. All are two-lane roads with capacities in rural areas (i.e., outside settled areas such as Moyock and Aydlett) of approximately 5,000-6,000 vehicles per day at 55 mph.

The latest traffic counts were taken in 1972. These data show, not surprisingly, that U.S. 158 is the most heavily travelled road in the county. Average daily traffic (ADT) on U.S. 158 was 3,800 vehicles per day (VPD) at Coinjock. A similar volume was experienced on Wright Memorial Bridge and on N.C. 168 at Moyock. N.C. 3 averaged less than 1,000 VPD between Aydlett and Grandy. N.C. 34 carried 2,500 VPD or less along its entire length.

Allowing for a generous twenty per cent increase in volume since 1972, none of these roads would be carrying average daily volumes at or near their capacity. ADT does not, however, indicate the peak volumes experienced during the tourist season. Specific counts for weekend and high travel periods have not been conducted for Currituck County but local opinion indicates at least a doubling of traffic on U.S. 158 for typical summer weekends. Such volumes do approach and may at times exceed the capacity of this road.

Schools (Source: 21)

In 1972, there were five public schools in Currituck County, four elementary and one secondary. Of the five schools, four had classroom capacities less than the average daily membership. These data are illustrated in the following table:

Currituck County Schools
Capacity/Membership
1972

School	Average Daily Membership	Classroom Capacity
Central Elem.	635	550
Knotts Island Elem.	134	100
W. T. Griggs Elem.	362	425
Moyock Elem.	352	300
J.P. Knapp(Secondary)	591	500

The County subsequently retained a consultant to prepare a detailed outline of school construction needs. Since the consultant's report was completed in 1974, construction has started on a new high school and on additions to two elementary schools. The existing high school will be converted to a junior high school. When the current construction program is complete, the County's school facilities will be adequate for the planning period.

CURRENT PLANS, POLICIES, AND REGULATIONS

State Agency Plans

Highway Improvement Program 1974-1981: Prepared by the N. C. Department of Transportation, this is a state-wide schedule of highway improvement projects to be undertaken during the seven-year period 1974-1981. No projects are proposed for Currituck County during that period.

Resolution of the N. C. Board of Transportation: At its meeting on April 4, 1975, the Board adopted a resolution setting forth its position with respect to access to the Currituck Banks. The effect of this resolution is to endorse the proposal of The Currituck Plan: initial access to the Banks should be by ferry at approximately mid-county. This should be replaced by a mainland-Banks bridge at some point in the future. The Board also called for location studies for these facilities. As of this writing, those studies have not been started and there has been no other progress toward implementing the interest of the Board. A copy of the Board's certified minutes is included below.

Statewide Comprehensive Outdoor Recreation Plan (SCORP): The purpose of SCORP is to provide the Governor and General Assembly with a management tool to assist them in examining and selecting investment alternatives. The scope of the SCORP is to compile and analyze the existing supply of and demand for recreation facilities; to determine future demand; to analyze the roles and capabilities of the various providers of recreation opportunities to meet these needs; and to make recommendations that define a course of action that will most effectively meet future outdoor recreation needs.

The weighty document makes no specific proposals for the acquisition and development of any federal, state, or local recreational facilities in Currituck County.

Regional Plans

Currituck County is a member of the Albemarle Regional Planning and Development Commission (ARPDC). (ARPDC is the Lead Regional Organization for Multi-county Planning in Region R.) Currituck County is thus covered by all planning documents prepared by ARPDC. It would not be particularly useful to review here all the planning "output" of ARPDC. Much of it is not related to land use concerns and in any case the volume is too great to attempt even to summarize it.

A brief look at one recent ARPDC document is warranted, the Water Resource Management plan by Wm. F. Freeman Associates (1975). This report inventories existing water distribution and wastewater collection/treatment systems for each county in the Region. It also makes recommendation for future facilities based upon anticipated demand. In spite of the water bond referendum defeat (1974) the plan recommends that emphasis be placed upon the construction of water facilities for existing high density areas (Moyock, Woodleigh-Knotts Island, Currituck, Shawboro, and Coinjock). The U.S. 158 corridor from N.C. 3 to Point Harbor should also be considered.

Wastewater facilities should be considered after construction of the water distribution system. These must be based upon a 201 facilities plan. (Currituck is not a 201 facilities planning area.)

Specific proposals for water and sewer facilities on the Outer Banks are not included. However, the consultants do state that concentrated use of wells and septic tanks on the Banks would be dangerous since the ground water supply is extremely limited.

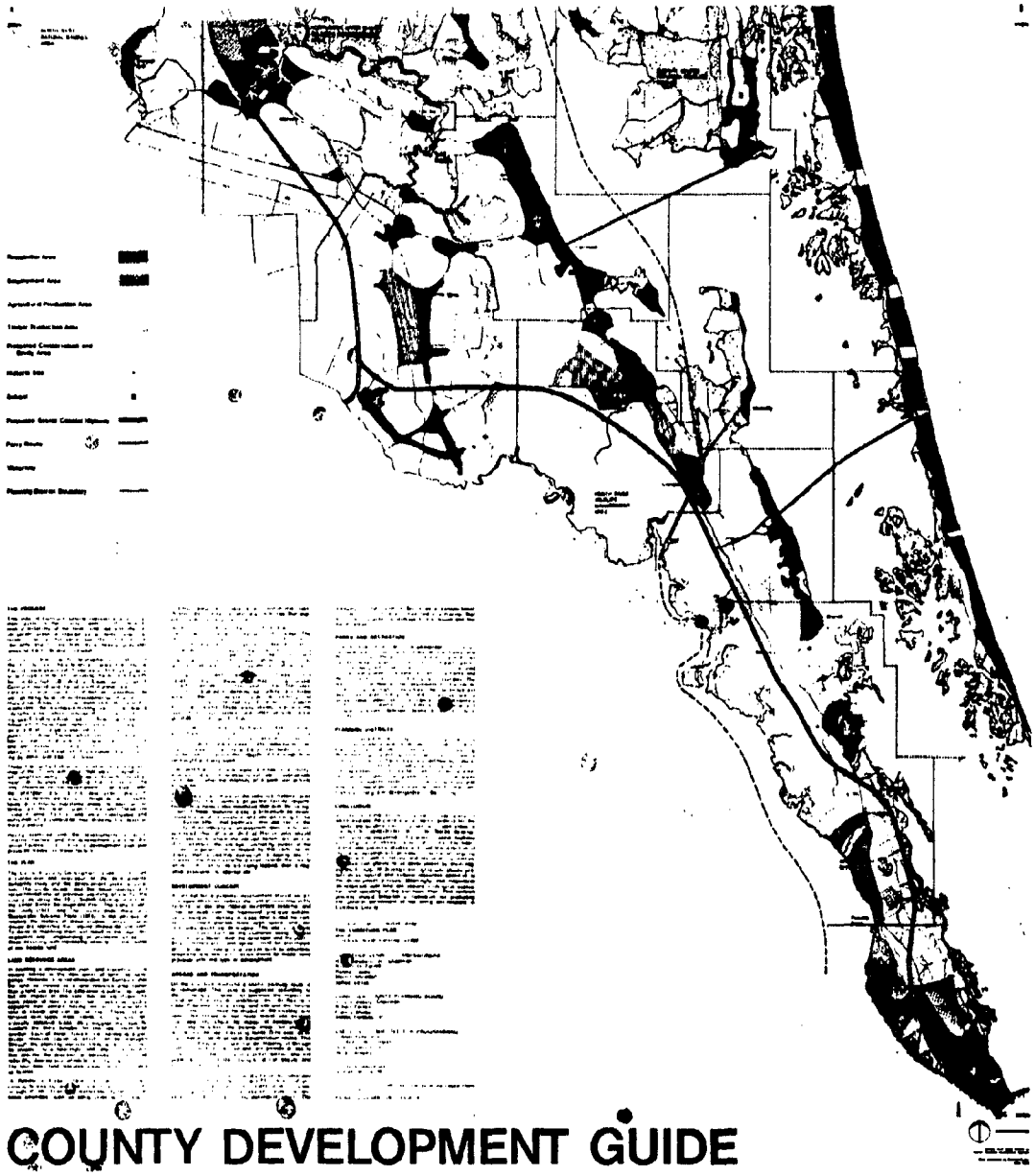
Local Plans

County Development Guide (1974): A land use plan which designates future land use in various areas as Residential, Employment, Agricultural Production, Timber Production or Conservation. The Development Guide proposes a limited access "scenic coastal highway" through the County. Initial access to the Outer Banks is to be provided by a ferry between Aydlett and Corolla. (Map exhibit)

Outer Banks Development Plan (1973): This plan is a written and graphic policy statement about how the Outer Banks should be developed; it recommends (1) protection of marshes and dune systems, (2) State acquisition of historic and recreation sites, (3) "cluster" design schemes and water and sewer utilities in new developments, and (4) ferry access from the mainland. (Map exhibit)

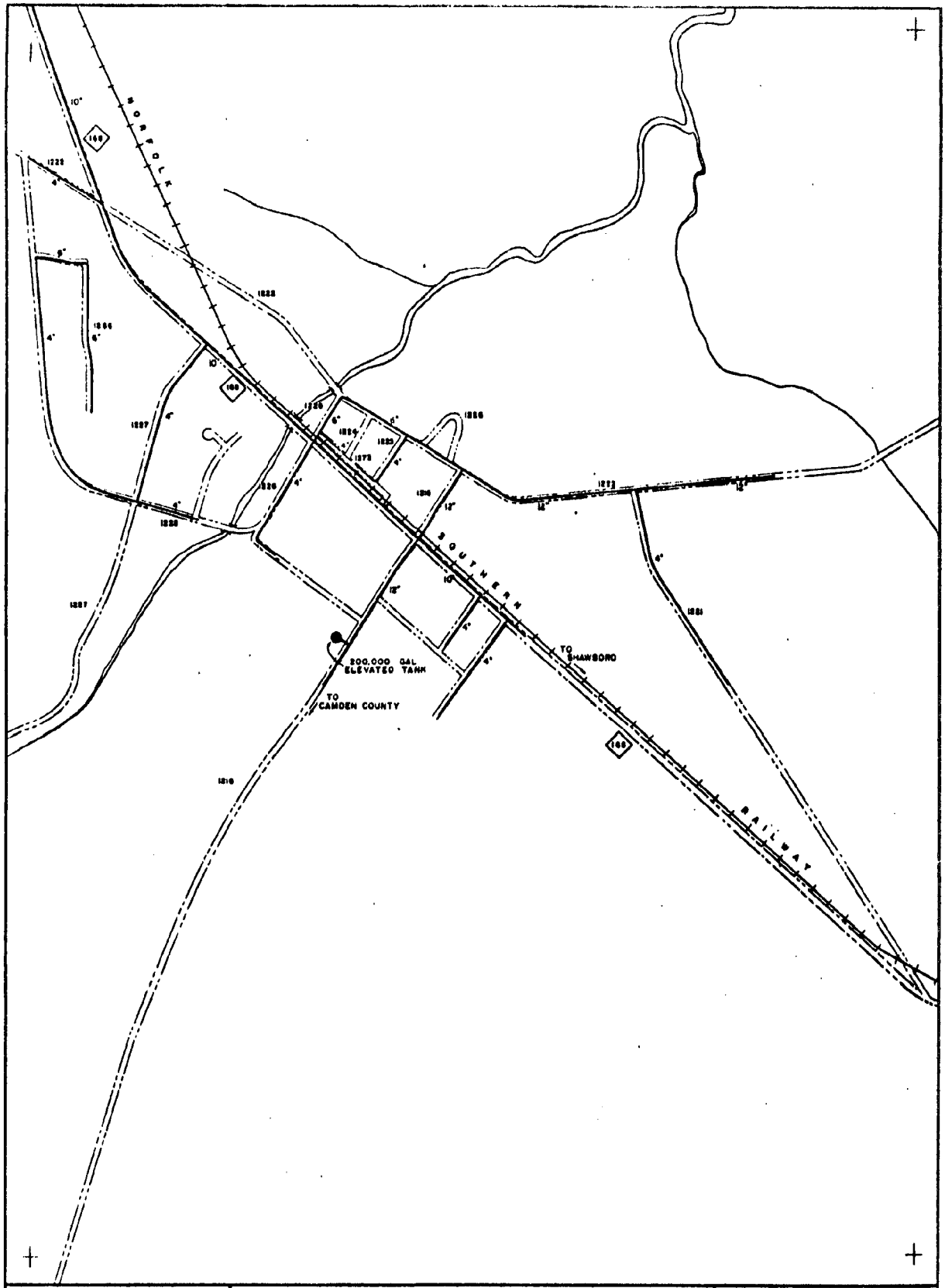
Feasibility Study on Water and Sewer Facilities (1974): This two-volume study explores requirements, cost estimates and proposes a financing plan for water and sewer utilities for the Mainland and Outer Banks through 1990. (A bond issue referendum to provide partial funding for Phase I of the water system was rejected by the voters in 1974.) (Map exhibit)

Community Facilities Plan (1973): This plan contains an inventory and analysis of existing community facilities and makes estimates of future needs based upon anticipated population growth and planned land use patterns. Services covered by the plan and not treated elsewhere include:



COUNTY DEVELOPMENT GUIDE

THE CURRITUCK PLAN



WATER DISTRIBUTION SYSTEM

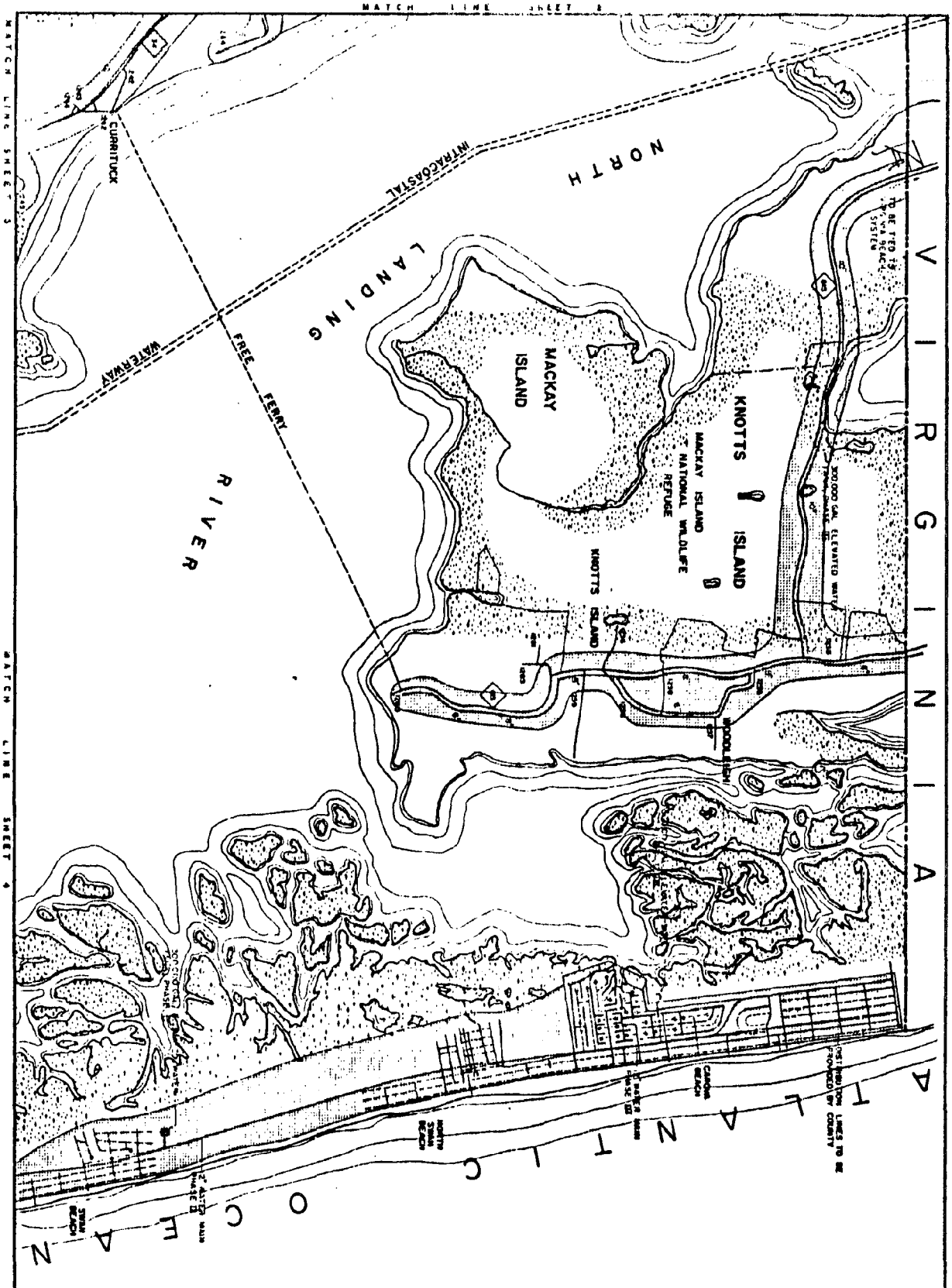
PROPOSED

WATER MAIN ——

STORAGE TANK ●

WATER TREATMENT PLANT ■

MOYOCK
NORTH CAROLINA



WATER DISTRIBUTION SYSTEM

EXISTING PROPOSED

EXISTING SERVICE AREA

PHASE I CONSTRUCTION 1974-1980

PHASE II CONSTRUCTION 1980-1985

PHASE III CONSTRUCTION 1985-1990

WATER MAIN

STORAGE TANK

WATER TREATMENT PLANT

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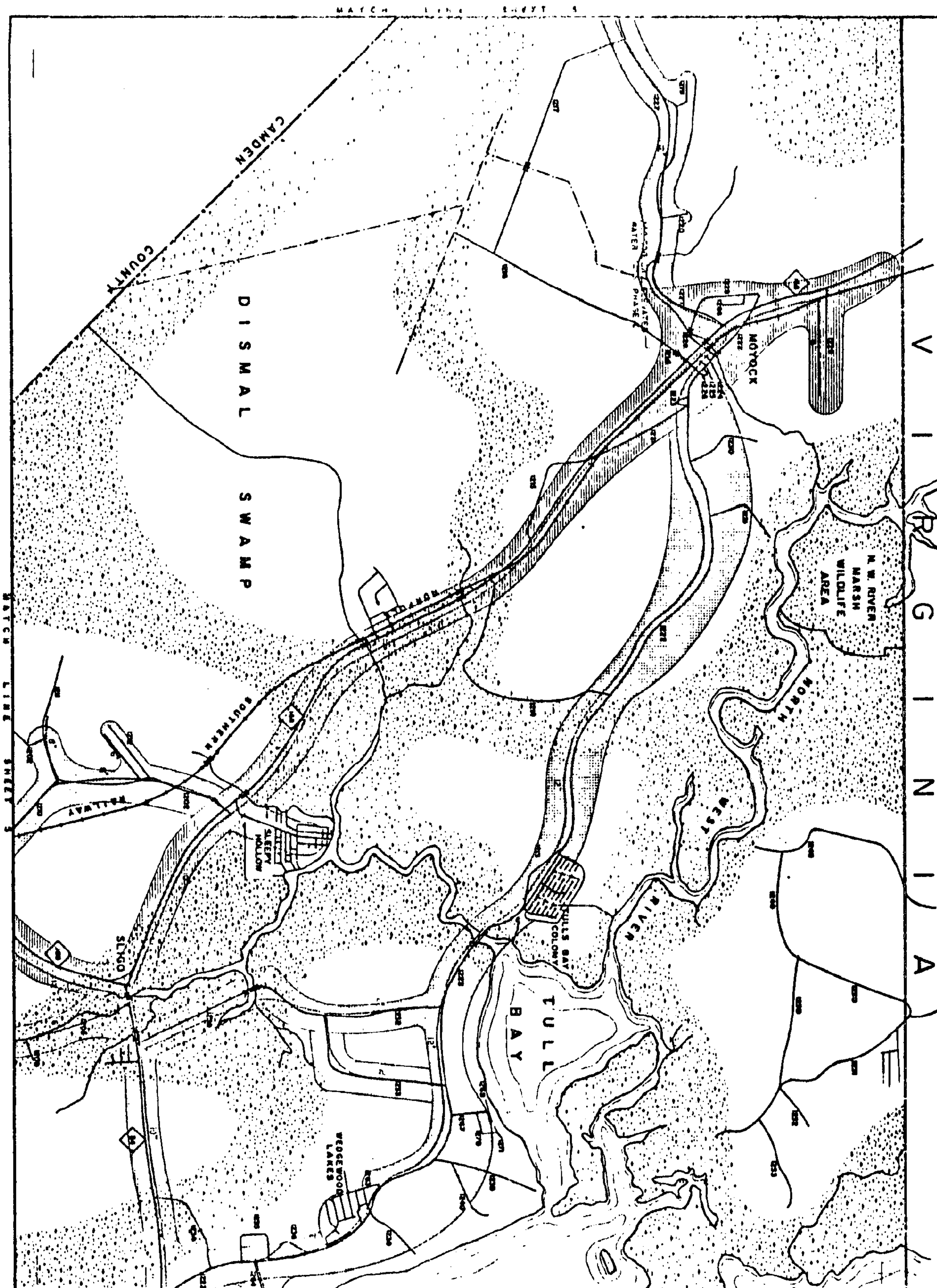
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 1 OF 7



WATER DISTRIBUTION SYSTEM

	EXISTING		PROPOSED
EXISTING SERVICE AREA			
PHASE I CONSTRUCTION 1974-1980	— — —	WATER MAIN	———
PHASE II CONSTRUCTION 1980-1985	( )	STORAGE TANK	●
PHASE III CONSTRUCTION 1985-1990	( )	WATER TREATMENT PLANT	●

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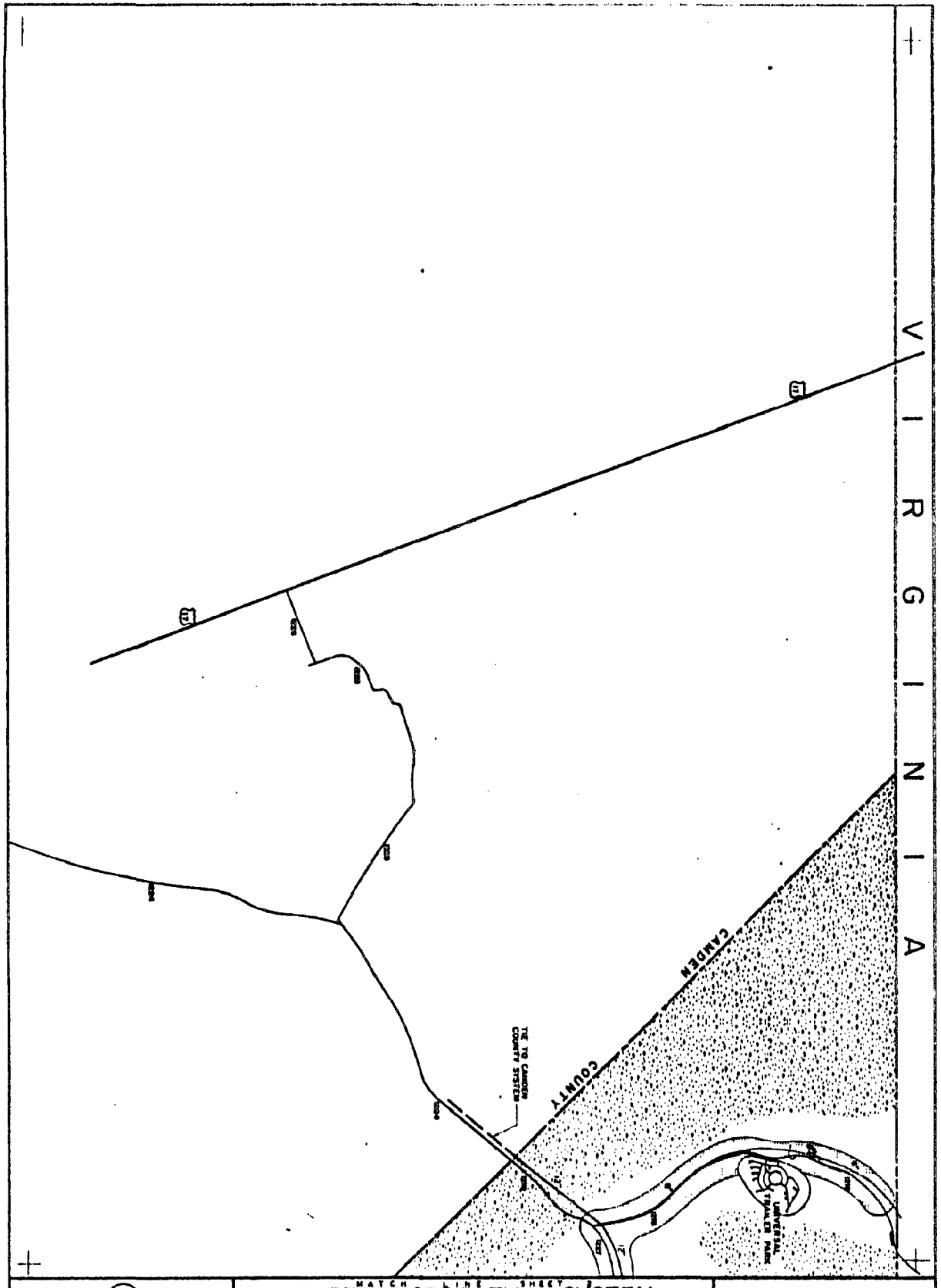
NORTH CAROLINA

SHEET 2 OF 7



WATER DISTRIBUTION SYSTEM

EXISTING SERVICE AREA

PHASE I CONSTRUCTION 1974-1980

PHASE II CONSTRUCTION 1980-1988

PHASE III CONSTRUCTION 1988-1998

EXISTING — — — WATER MAIN ——— PROPOSED

STORAGE TANK

WATER TREATMENT PLANT

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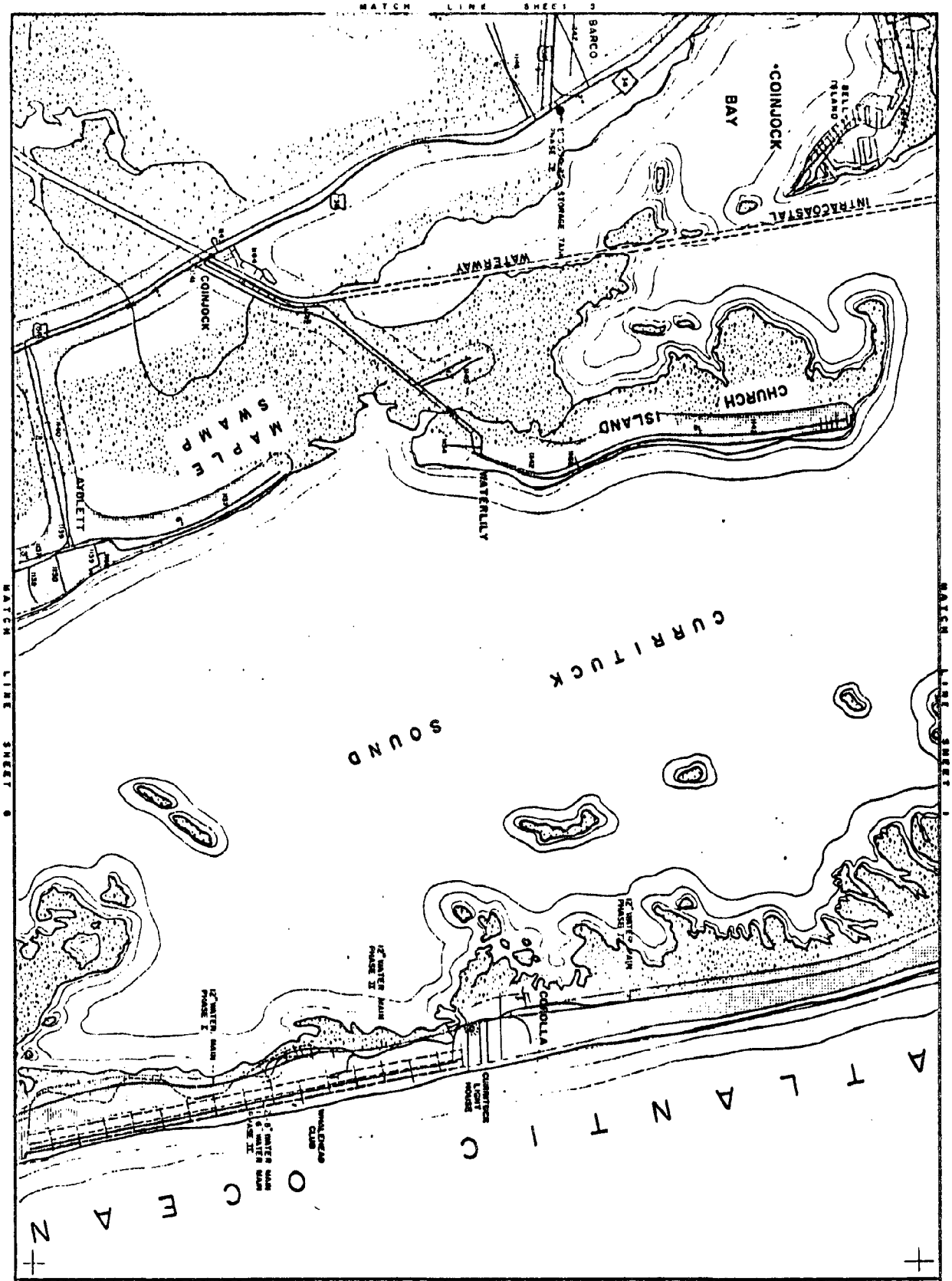
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 3 OF 7



WATER DISTRIBUTION SYSTEM

EXISTING SERVICE AREA

PHASE I CONSTRUCTION 1976-1980

PHASE II CONSTRUCTION 1980-1985

PHASE III CONSTRUCTION 1985-1990

	EXISTING	PROPOSED
WATER MAIN		
STORAGE TANK		
WATER TREATMENT PLANT		

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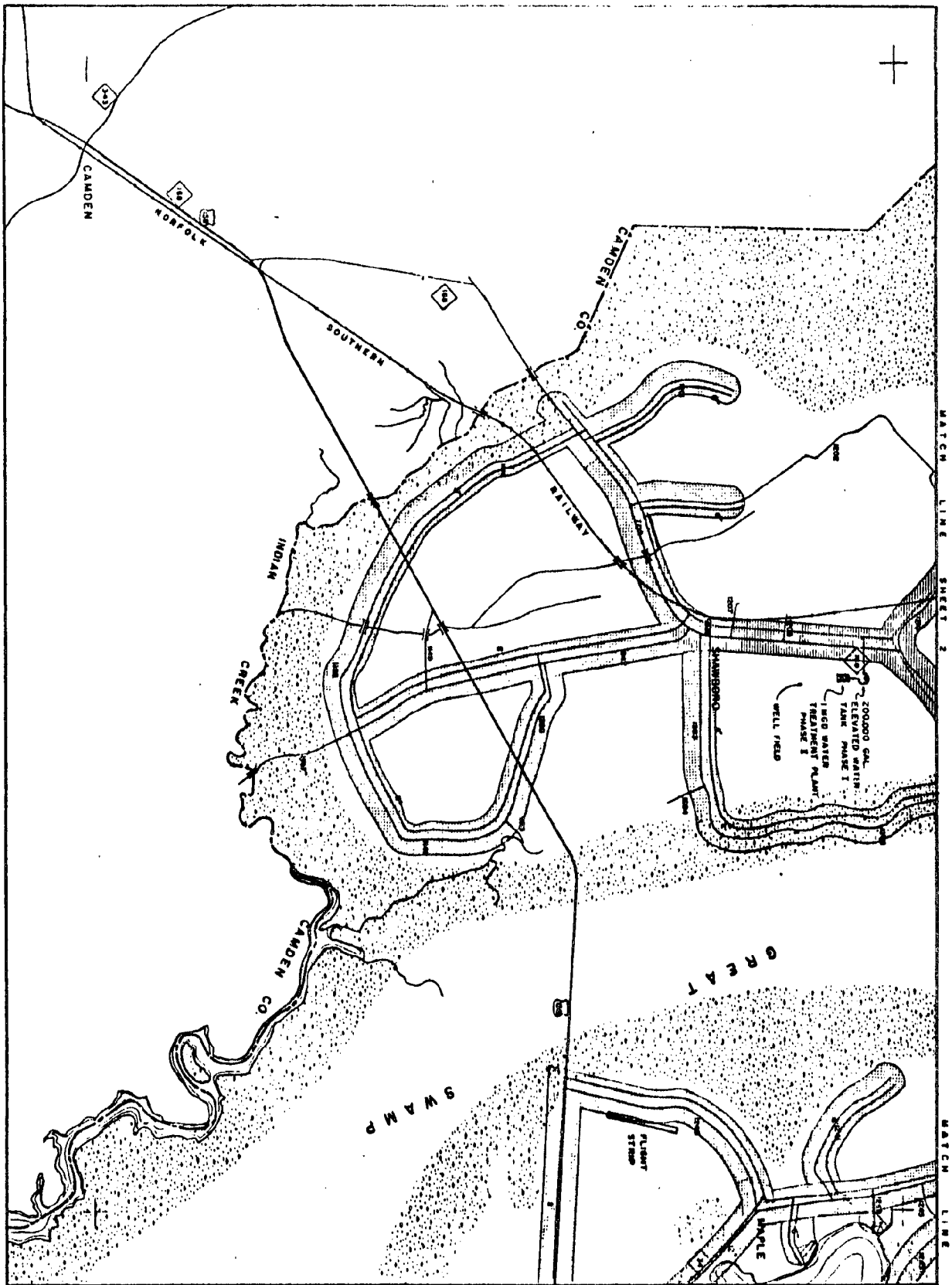
NORTH CAROLINA

SHEET 4 OF 7



NC

WATER DISTRIBUTION SYSTEM

EXISTING SERVICE AREA
PHASE I CONSTRUCTION 1974-1980
PHASE II CONSTRUCTION 1980-1985
PHASE III CONSTRUCTION 1985-1990

EXISTING
WATER MAIN
STORAGE TANK
WATER TREATMENT PLANT

PROPOSED
WATER MAIN
STORAGE TANK
WATER TREATMENT PLANT

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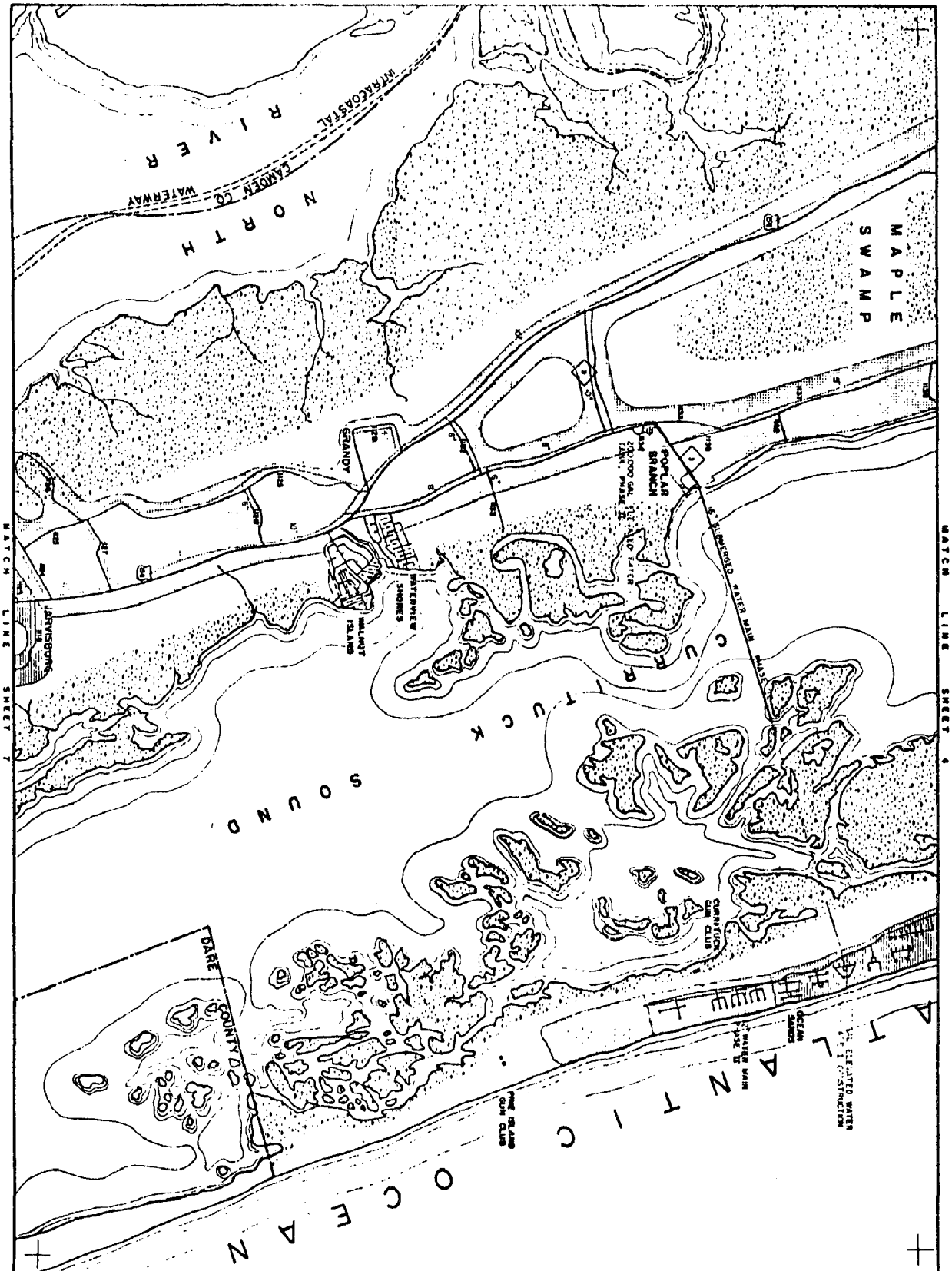
CONSULTING ENGINEERS

CURRITUCK COUNTY
NORTH CAROLINA

SHEET 5 OF 7



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WATER DISTRIBUTION SYSTEM

	EXISTING	PROPOSED
EXISTING SERVICE AREA		
PHASE I CONSTRUCTION 1979-1980	WATER MAIN	
PHASE II CONSTRUCTION 1981-1985	STORAGE TANK	
PHASE III CONSTRUCTION 1985-1990	WATER TREATMENT PLANT	

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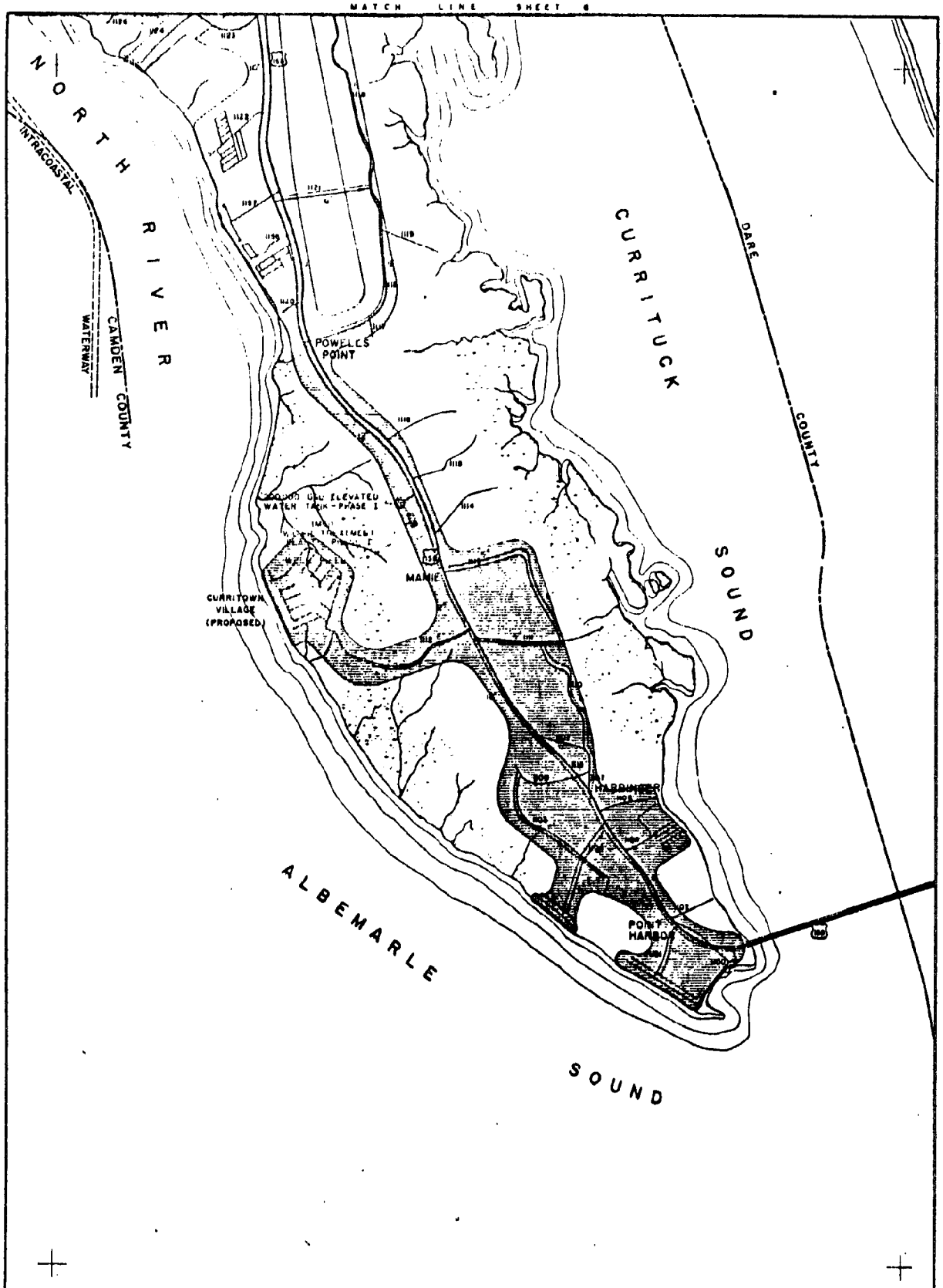
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 6 OF 7



WATER DISTRIBUTION SYSTEM

	EXISTING	PROPOSED
EXISTING SERVICE AREA		
PHASE I CONSTRUCTION 1976 - 1980	WATER MAIN	
PHASE II CONSTRUCTION 1980 - 1985	STORAGE TANK	
PHASE III CONSTRUCTION 1985 - 1990	WATER TREATMENT PLANT	

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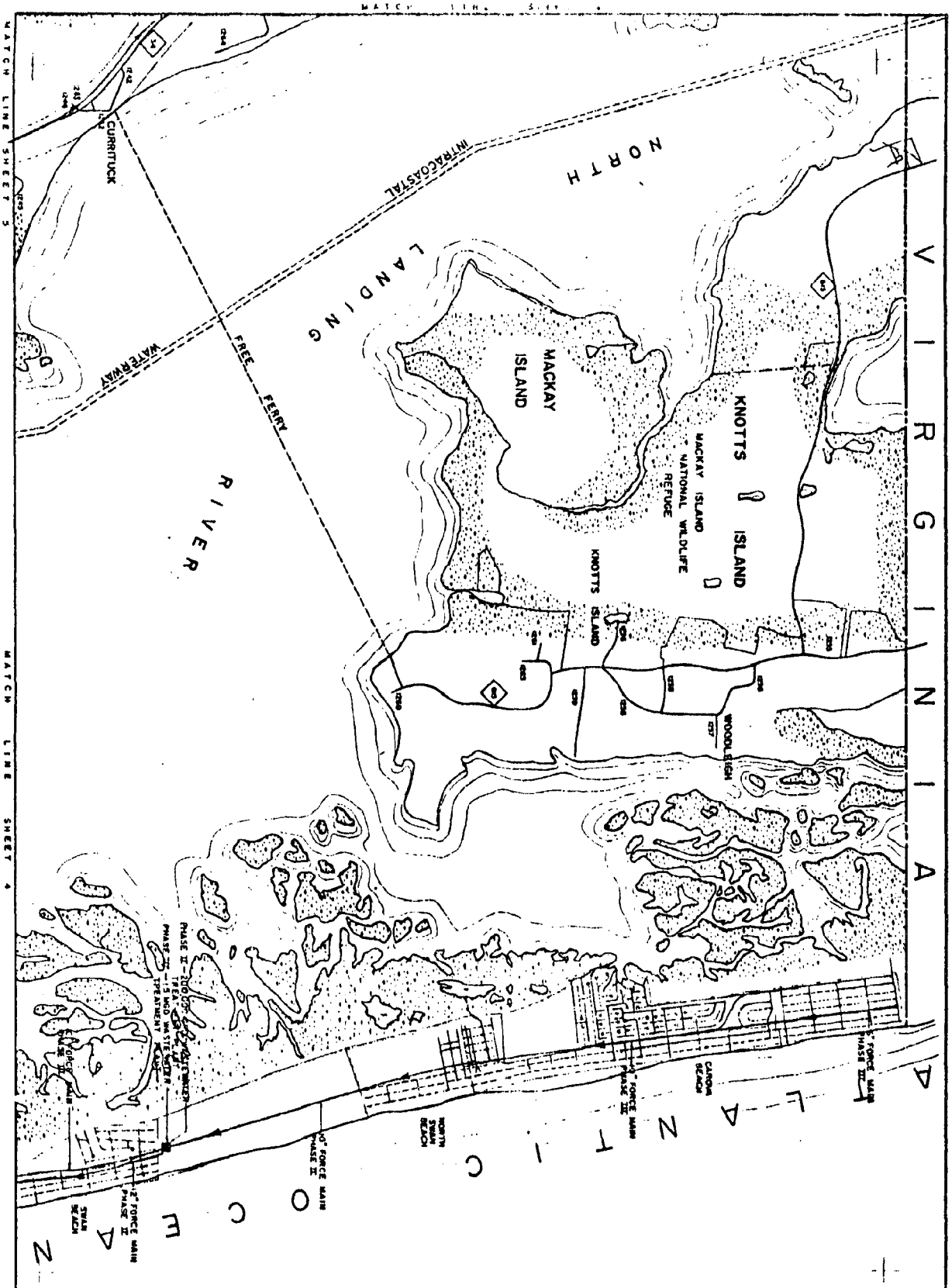
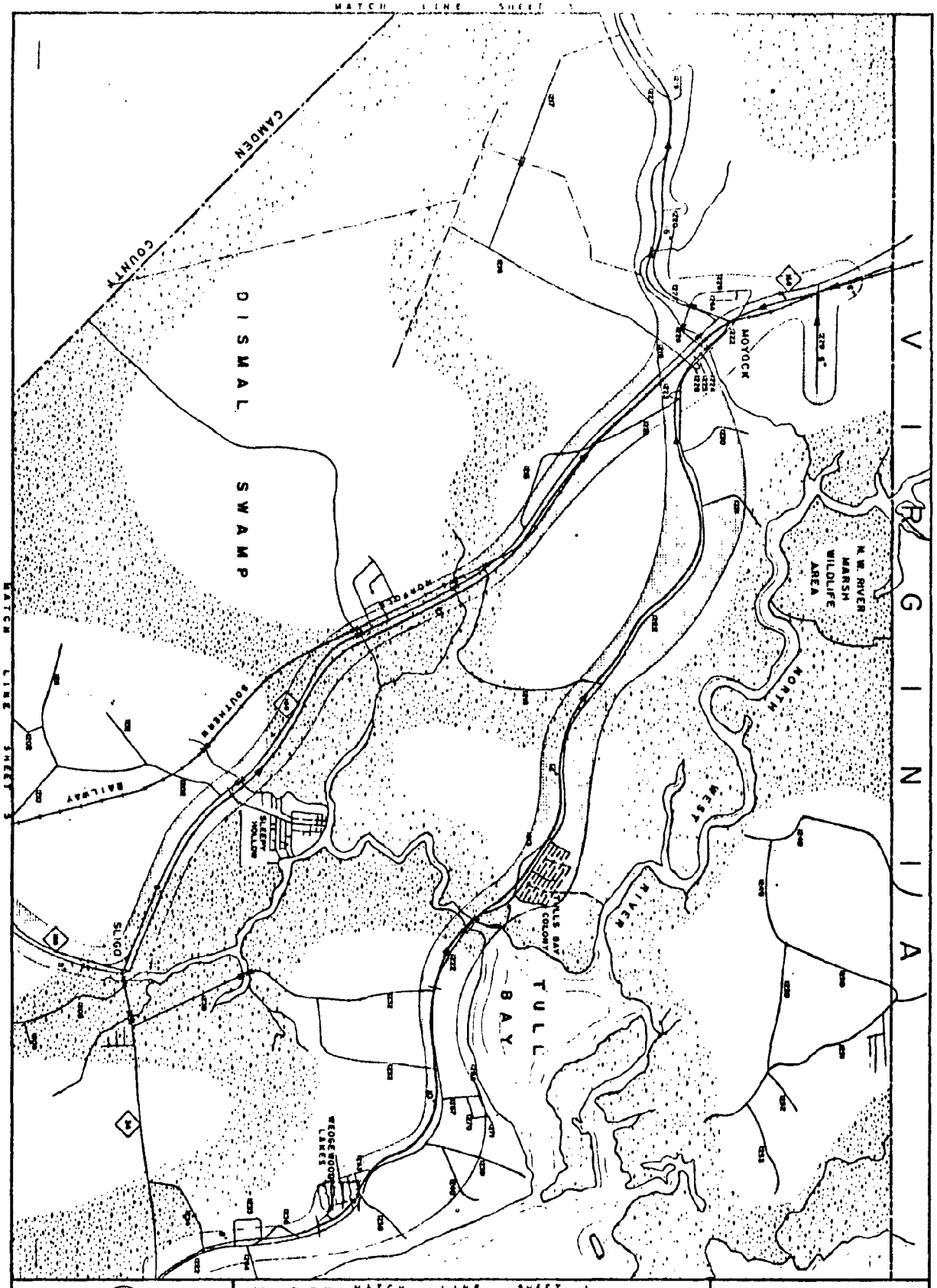
NORTH CAROLINA

SHEET 7 OF 7


MATCH LINE SHEET 5
MATCH LINE SHEET 4
CURRITUCK
INTRACOASTAL
WATERWAY
FREE FERRY
LANDING
NORTH
MACKAY ISLAND
KNOTTS ISLAND
MACKAY ISLAND NATIONAL WILDLIFE REFUGE
KNOTTS ISLAND
WOODLEIGH
RIVER
VIRGINIA
ATLANTIC OCEAN
PHASE II - 0.5 MGD WASTE WATER TREATMENT PLANT
8" FORCE MAIN PHASE II
12" FORCE MAIN PHASE II
STAR BEACH
NORTH SWAN BEACH
CAROVA BEACH
8" FORCE MAIN PHASE III
WASTEWATER COLLECTION SYSTEM
EXISTING SERVICE AREA
PHASE I CONSTRUCTION 1980
PHASE II CONSTRUCTION 1980-1985
PHASE III CONSTRUCTION 1985-1990
EXISTING
PROPOSED
COLLECTION LINE
FORCE MAIN
PUMPING STATION
TREATMENT PLANT
MOORE, GARDNER & ASSOCIATES, INC
CURRITUCK COUNTY
NORTH CAROLINA
SHEET 1 OF 7



WASTEWATER COLLECTION SYSTEM

EXISTING SERVING AREA
PHASE I CONSTRUCTION 1974-1980
PHASE II CONSTRUCTION 1980-1985
PHASE III CONSTRUCTION 1985-1990

EXISTING		PROPOSED
- - - -	COLLECTION LINE	———
———	FORCE MAIN	———
△	PUMPING STATION	▲
☒	TREATMENT PLANT	■

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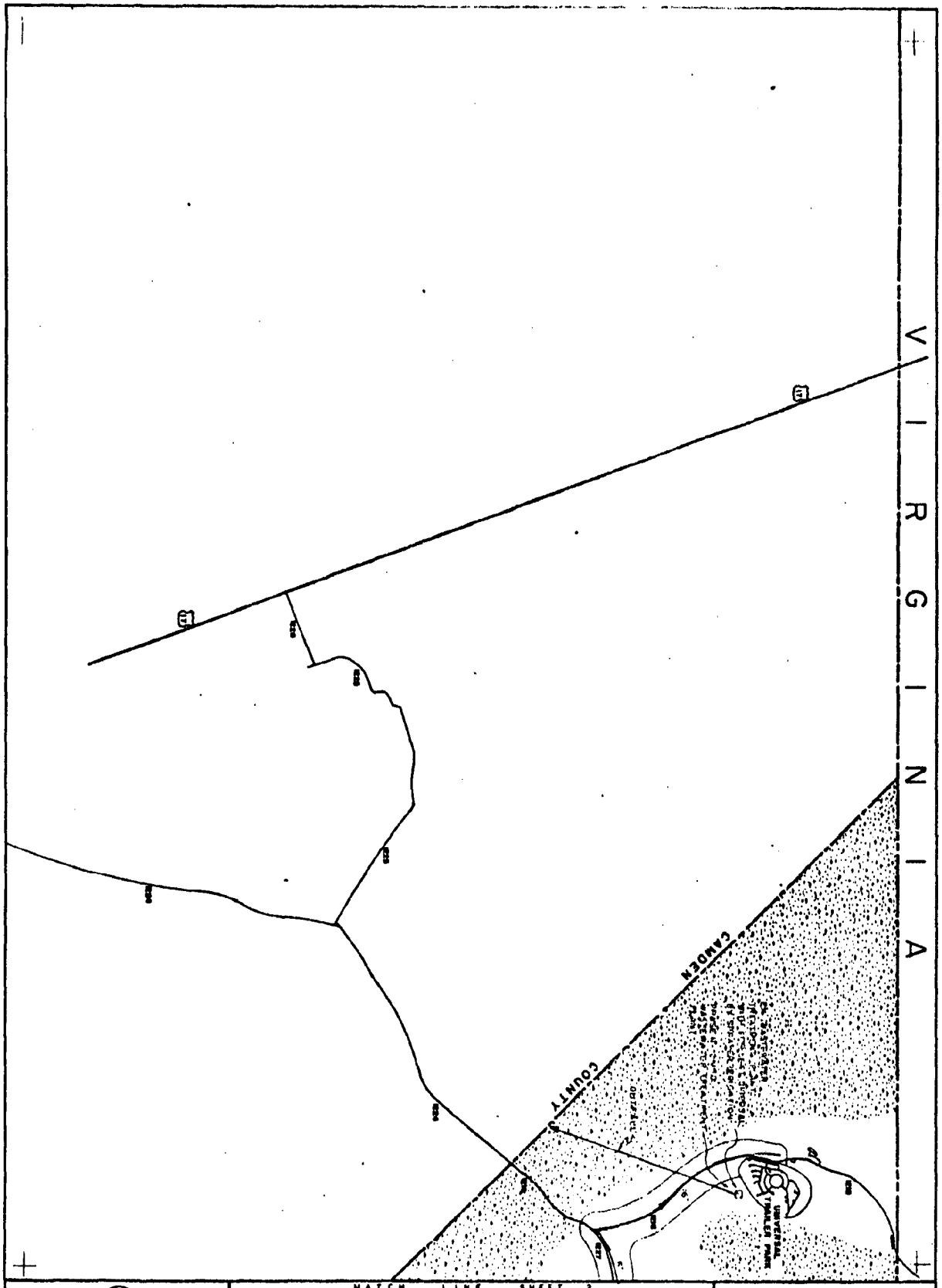
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 2 OF 7



WASTEWATER COLLECTION SYSTEM

EXISTING SERVICE AREA
PHASE I CONSTRUCTION 1974 - 1980
PHASE II CONSTRUCTION 1980 - 1985
PHASE III CONSTRUCTION 1985 - 1990

	EXISTING	PROPOSED
COLLECTION LINE		
FORCE MAIN		
PUMPING STATION	△	▲
TREATMENT PLANT		■

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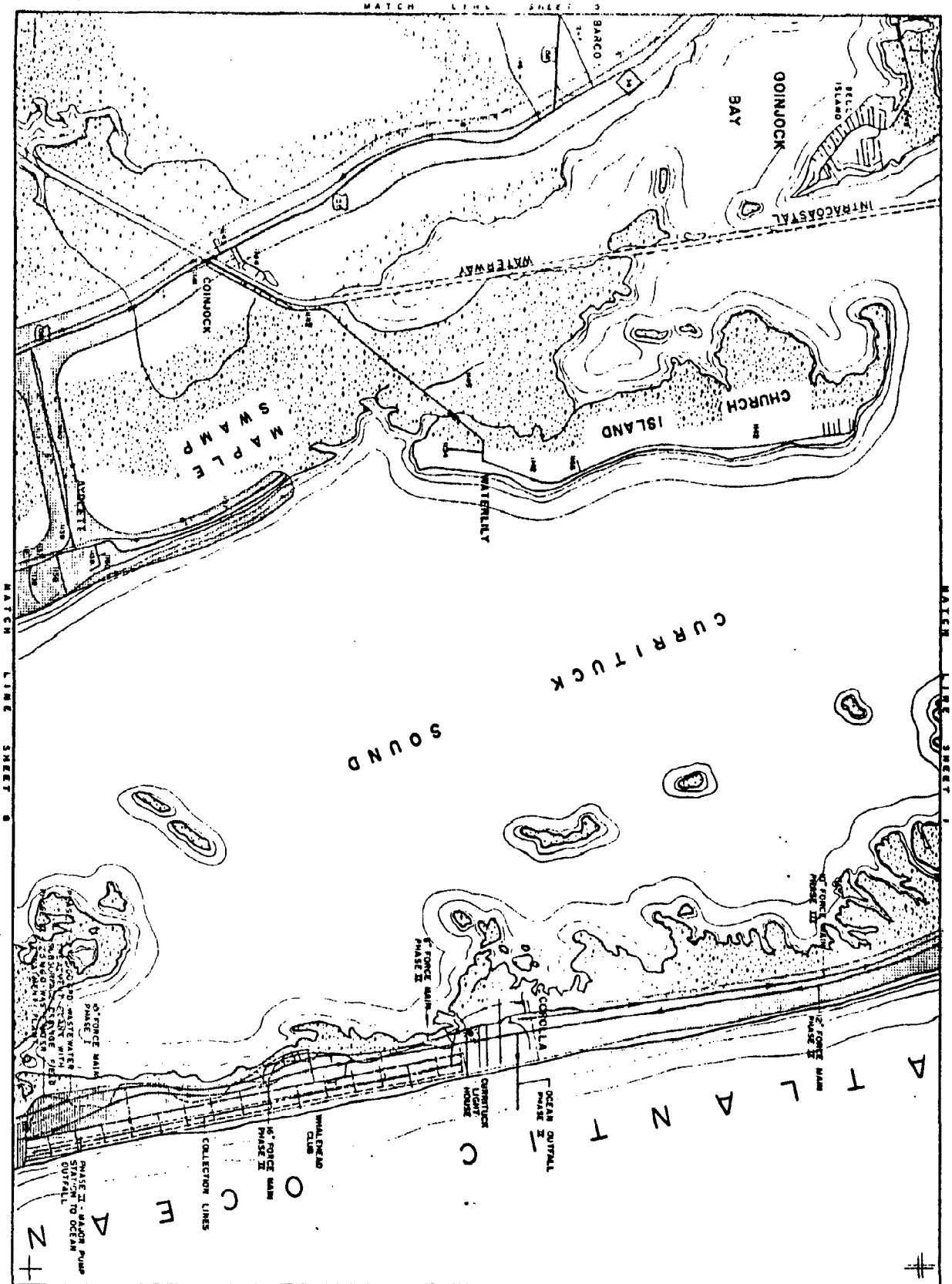
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 3 OF 7



WASTEWATER COLLECTION SYSTEM

EXISTING SERVICE AREA

PHASE I CONSTRUCTION 1974-1980

PHASE II CONSTRUCTION 1980-1985

PHASE III CONSTRUCTION 1983-1990

EXISTING		PROPOSED
- - - -	COLLECTION LINE	
	FORCE MAIN	
△	PUMPING STATION	▲
⊡	TREATMENT PLANT	■

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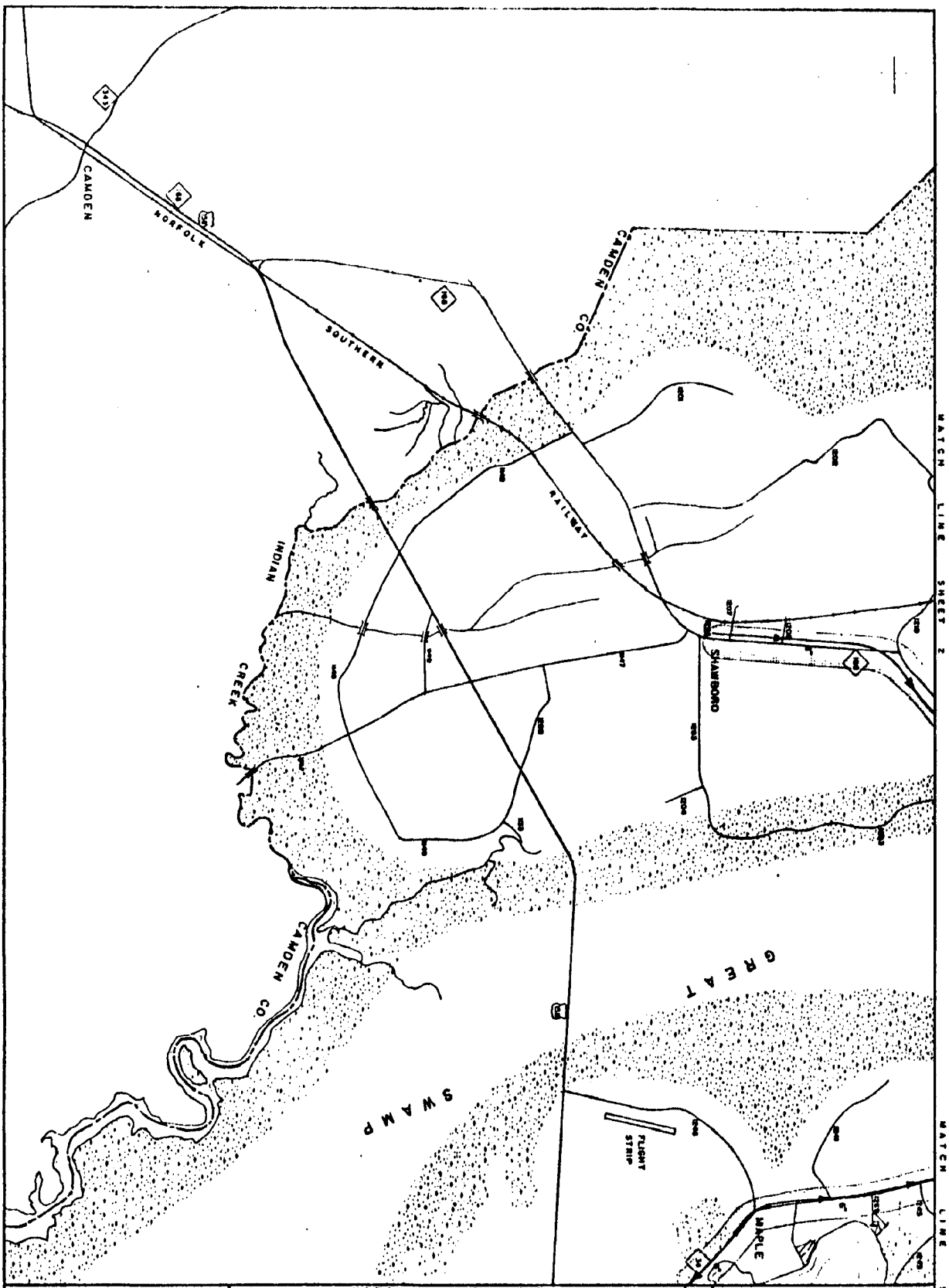
CURRITUCK COUNTY
NORTH CAROLINA

SHEET 4 OF 7



WASTEWATER COLLECTION SYSTEM

	EXISTING	PROPOSED
DRAINAGE SERVICE AREA		
PHASE I CONSTRUCTION 1974-1980	COLLECTION LINE	
PHASE II CONSTRUCTION 1980-1985	FORCE MAIN	
ULTIMATE CONSTRUCTION 1985-2000	PUMPING STATION	
	TREATMENT PLANT	

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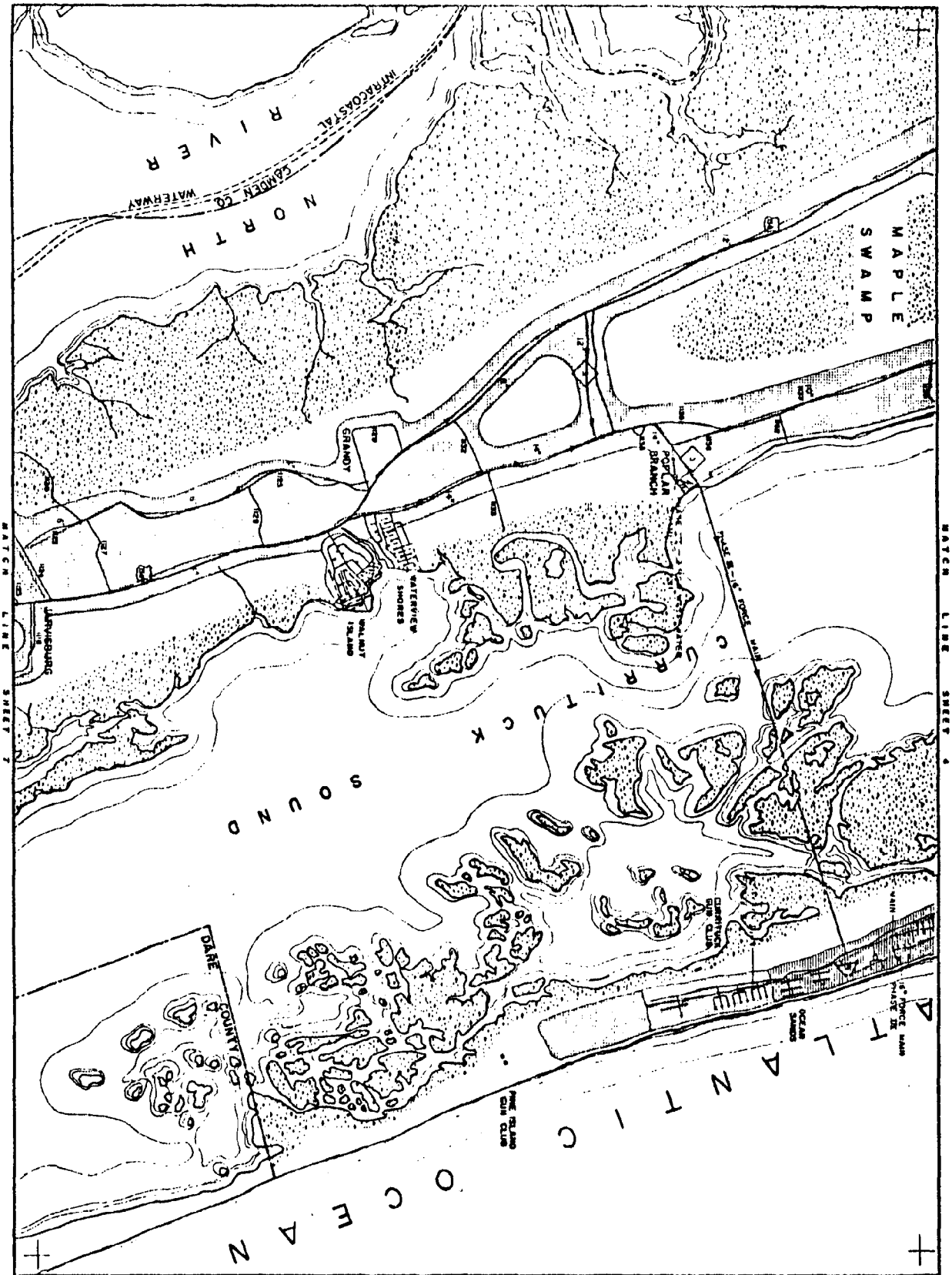
NORTH CAROLINA

SHEET 3 OF 7



WASTEWATER COLLECTION SYSTEM

EXISTING SERVICE AREA

PHASE I CONSTRUCTION 1979-1980

PHASE II CONSTRUCTION 1980-1985

PHASE III CONSTRUCTION 1983-1990

	EXISTING	PROPOSED
COLLECTION LINE		
FORCE MAIN		
PUMPING STATION		
TREATMENT PLANT		

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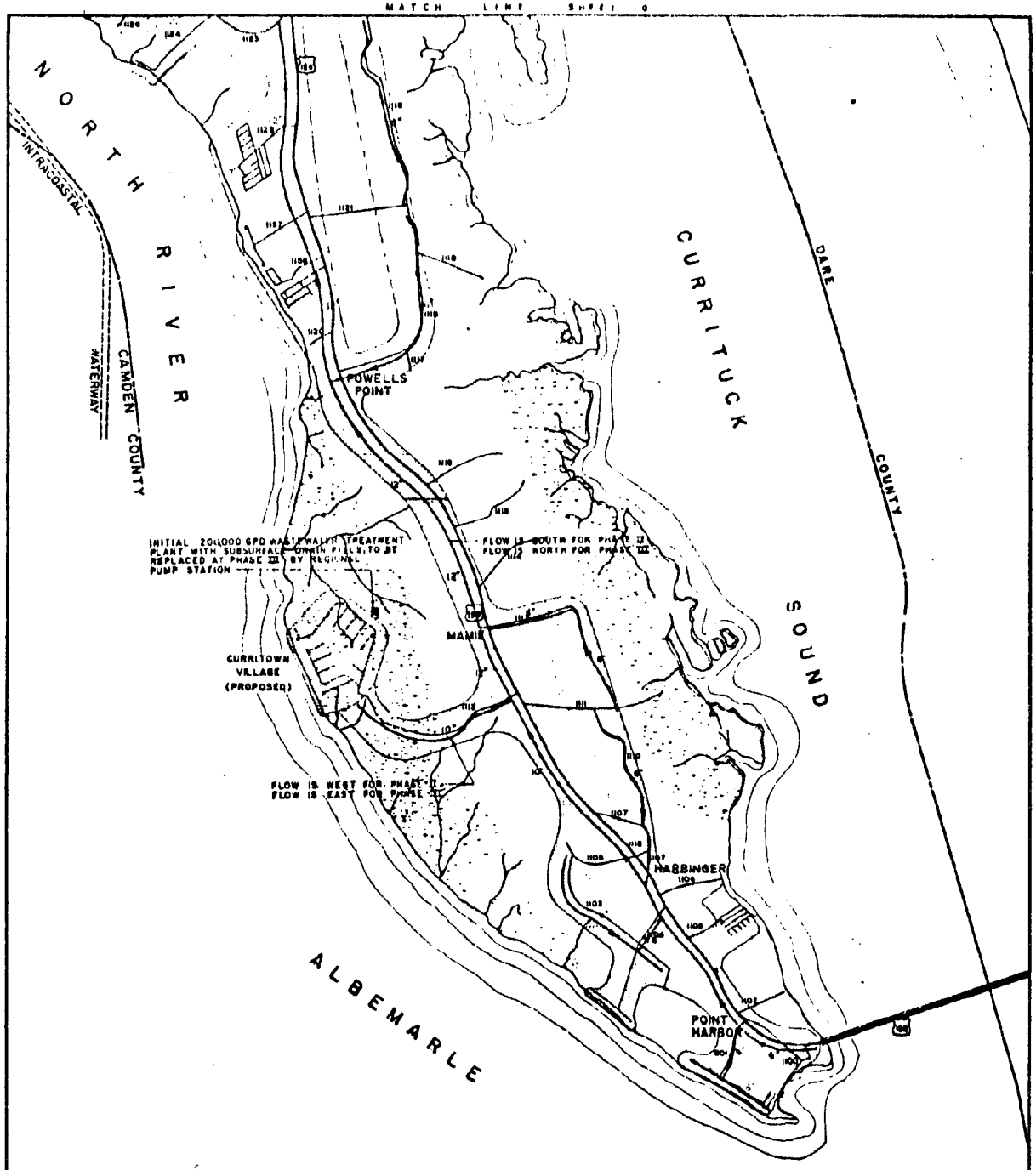
NORTH CAROLINA

SHEET 6 OF 7



WASTEWATER COLLECTION SYSTEM

	EXISTING	PROPOSED
EXISTING SERVICE AREA		
PHASE I CONSTRUCTION 1976-1980	COLLECTION LINE	
PHASE II CONSTRUCTION 1980-1985	FORCE MAIN	
PHASE III CONSTRUCTION 1985-1990	PUMPING STATION	
	TREATMENT PLANT	

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CURRITUCK COUNTY
NORTH CAROLINA

SHEET 7 OF 7

- Fire protection
- Health services
- Library services
- Solid waste management
- Local recreation facilities
- Law enforcement

Currituck County Schools Master Plan (1974): The plan outlines school construction needs during the period 1975-1985. A new high school and additions at two elementary schools are under construction. The existing high school will be converted to a junior high school. When the current construction program is complete, the County's school facilities will be adequate for the planning period.

Transportation Plan: Currituck County's transportation plan consists of the following:

- Highway Improvement Program 1974-1981 (N.C. DOT)
- Highway and ferry proposals set forth in The Currituck Plan
- Resolution of the N. C. Board of Transportation dated April 4, 1975

(These were discussed above under "State Plans.")

Local Land Use Regulations

The land use regulations listed below are in effect in Currituck County:

Zoning Ordinance: The most recent revision of the zoning text and map were adopted in January, 1975. The entire County is covered by the ordinance. The ordinance divides the County into districts and regulates and restructs the use of land, buildings, and structures within these zoning districts.

Subdivision Regulations: The current subdivision regulations were adopted in 1971 and have been substantially amended several times since. The regulations govern the arrangement of lots and streets in new subdivisions, and the provision of improvements as necessary. New subdivisions must be approved by the Board of Commissioners.

Dune Protection Ordinance: Adopted in 1971, the ordinance requires a permit before altering any sand dune. It has not been carefully enforced. However, there has been little construction or land altering activity on the outer banks until recently.

The zoning ordinance, subdivision regulations and dune protection ordinance are enforced by the County Development Coordinator.

Building Permits: A special act of the legislature in 1957 set up Currituck's building permit system. Building permits are issued by the Tax Supervisor only for the purpose of assessing new construction.

Improvements (Septic Tank) Permits: Septic tank permits are issued by the County Sanitarian, who checks the soil characteristics of each lot before a permit is issued. Septic tanks, distribution boxes and drain lines are checked in place before they are covered.

Currituck County has not adopted any of the kinds of regulations listed below:

- Floodway ordinance
- North Carolina Building Code (see "Building Permits," above)
- Historic district regulations (neither as part of the zoning ordinance nor by other means)
- Sedimentation regulations
- Environment impact statement ordinance
- Nuisance regulations

PUBLIC PARTICIPATION ACTIVITIES

Determination of Issues, Goals, Objectives, and Policies Employed to Secure Public Participation and Degree of Participation

Currituck County has had an active land use planning program since 1963 when the "Currituck Resources Council" was established by the Board of Commissioners. A County Planning Board was later organized. The Planning Board completed a Land Potential Study in 1966. The County adopted Subdivision Regulations in 1965 and a Zoning Ordinance in 1967.

A Sketch Development Plan was prepared in 1972 and a Community Facilities Plan in 1973.

The Outer Banks Development Plan (known as "The Currituck Plan") was completed in June of 1973; this plan is a written and graphic policy statement about how the county's outer banks should be developed.

A County Development Guide was completed in 1974. This revised version of the 1972 Sketch Development Plan used a land classification system like the system now required by the Coastal Management Act. Feasibility studies on water and sewer facilities were also done in 1974.

During the last ten years there has been very little active citizen participation in identifying land use issues, goals and objectives. Many people have appeared at public hearings on zoning changes, and their cumulative voices amount to considerable citizen input into land use decision making; however, zoning controversies have focused on the mobile home issue, rather than land use in general. Public hearings on the Outer Banks Development Plan were well attended, but many people subsequently complained that their involvement was only superficial.

In March, 1975 a Citizens Advisory Committee on Land Use Planning was appointed. This Committee has twenty-one members including men and women, minority group members, and someone from each community in the County. The Advisory Committee was asked "to secure the views of a wide cross section of citizens representing not only different geographical areas of the County, but the varying economic, social, ethnic, and cultural interests as well, on the goals and policies for Land Use Planning."

The Advisory Committee has used community meetings and a questionnaire to solicie citizen input.

Four concurrent community meetings were held at Moyock, Currituck, Poplar Branch, and Knotts Island on June 10, 1975. The meetings were announced in newspaper articles and posters placed in businesses. A total of forty citizens attended, a disappointing turnout, although there were good discussions at each meeting. The major topics of discussion were: mobile homes, recreation, particularly the need for better public access to the sound and ocean, and; a need for limited industrial development, with emphasis on agricultural and recreation products.

A second series of seven concurrent community meetings was held on October 2, 1975 at Knott's Island, Moyock, Shawboro, Currituck, Coinjock, Grandy, and Powells Point. These meetings were well advertised in news articles, display ads, and posters at several businesses. A total of seventy-five people attended these meetings. The recurring topics at these meetings were: mobile homes, the need to "four lane" the N.C. 168/N.C. 34/U.S. 158 corridor; outer banks access (with a road down the strand via Knott's Island most frequently mentioned); the need to protect agricultural land by avoiding excessive taxation of such land, and; a need for limited industrial development.

In late September, 1975, a questionnaire was mailed to 850 households in the county (a 28% sample). As of November 6, 1975, 220 questionnaires had been returned. Seventy-three percent of the respondents favored "continuation of an Agricultural Based Economy" (as opposed to emphasis on residential or industrial development). Fifty-nine percent were opposed to a central water or sewer project, at least at the present time. In answer to the question "What do you think are the major development and transportation problems facing the county?", the most frequent responses were:

(1) The need to "four-lane" N.C. 168/N.C. 34/U.S. 158.

(2) The influx of mobile homes into the county.

(3) Complaints about secondary roads.

(4) Outer Banks Access.

(5) A need for limited industrial development.

Identification and Analysis of Major Land Use Issues

Following is a discussion of the major land use issues facing the county in the next ten years, as identified by the participants in the CAMA planning process.

Alternative methods considered for dealing with these issues are also cited.

The discussion illustrates that the Currituck citizens who participated in the preparation of the plans share most of the Coastal Resource Commission's concerns about the use of land on the coast. Their concerns, as expressed below, bear directly or indirectly upon four of the Commission's five primary concerns:

- The impact of population and economic trends
- The provision of adequate housing and other services
- The conservation of productive natural resources
- The protection of important natural environments

Mobile Homes: At present there are 767 mobile homes and 114 double wide mobile homes in Currituck County, amounting to 26% of the housing stock. (Compared to about 7% in the State and 8% in the Albemarle region.) Most of the population increase from 6900 in 1970 to 9500 in 1975 is housed in mobile homes. The influx of mobile homes into the county has been the result of several factors:

- Particularly in the present economy, mobile homes are an important part of the housing stock. They are often the only available housing laternative for many young couples and retirees.

- Some people prefer mobile home living.

- Strict zoning laws have excluded mobile homes from most areas in nearby metropolitan areas. Currituck is the nearest jurisdiction where many families can rent or buy a mobile home space or lot.

The following complaints are raised about mobile homes:

- "They are unsightly and depreciate property values"

- "They don't pay their fair share of taxes." Mobile homes are taxed as personal property and mobile homes owned by non-resident servicemen cannot be taxed here. The value for taxation of the average mobile home is about 68% of the value of the average house. Mobile homes depreciate in value; most homes increase in value.

- Mobile home parks and subdivisions can be developed quickly, creating sudden demands for schools and other services that are difficult to meet.

The following alternatives were discussed:

- No more mobile homes in the county. This alternative did not seem acceptable, although many residents favor excluding any more mobile homes from certain areas.

- Allow mobile homes only in parks. This approach has been tried previously in the county without success. In fact, there seemed to be a consensus favoring prohibition of any more mobile home parks. (A problem is that many citizens do not make a distinction between a mobile home park and a mobile home subdivision--while it may be possible to exclude any more mobile home parks from the county, it would be difficult to exclude subdivisions).

- The Soldier and Sailors Relief Act should be amended to allow mobile homes owned by non-resident servicemen to be taxed locally.

- There should be a regional "fair share" plan under which nearby Virginia localities would change their zoning ordinances to allow more mobile homes, taking some of the pressure to absorb all of this type of housing from Currituck.

- Encourage the construction of more conventional housing in the county.

Resentment About Growth. This issue includes all of the concerns evoked by rapid growth and development. The county has two kinds of growth pressure; (i) "Spillover growth" from the adjacent metropolitan area, especially mobile homes, and (ii) retirement home, and recreation home development. Many people feel that the natural amenities of the county and its pastoral way of life are threatened. They resent increased taxes and overcrowded schools.

Alternative responses to this difficult to define problem seem to include:

a. A "no growth" policy (suggested at at least one community meeting.)

b. Slow growth

c. Controlled growth

d. Unrestricted growth.

The no growth alternative is probably not acceptable. A "No Growth" strategy would require more regulations and more government intervention than any other alternative--more government interference than most people want. Unrestricted growth is not a palateable alternative either, although some citizens expressed resentment about zoning and building regulations.

There is a strong sentiment in the county that growth should be limited and gradual so that demands for additional services don't cause burdensome and sudden tax increases. Growth should pay for growth--that is, wherever possible, developers should pay for community facilities that they create a demand for.

Traffic on U. S. 158, N. C. 34, and N. C. 168. There has been much discussion about whether the heavy seasonal traffic on the highways in the County is an asset or a liability. Many residents derive most or all of their income from service stations, restaurants, produce stands, antique shops and other businesses oriented to the tourist traffic and feel that even more should be done to cultivate tourist-oriented business. Other people are bothered by the heavy traffic, congestion in many business areas, delays at the Coinjock Bridge, and frequent accidents. This year schools were opened before Labor Day, but forced to close temporarily because of the danger of operating buses in the heavy holiday traffic. New warning signs, pavement markings and reduced speed limits were recently put in the Grandy area; new caution lights have been added in Moyock.

Some alternative solutions might be:

- A limited access highway on new alignment all the way through the county.
- Four lane existing N. C. 168, N. C. 34, U. S. 158 with five lane urban sections in congested areas.
- Route traffic along the outer banks, rather than the mainland.
- Limit business zoning to just a few areas; make special highway improvements to accommodate traffic in these areas.
- By-pass routes around congested areas with safeguards to keep the by-passes from becoming congested in turn.

The first alternative has met with little enthusiasm, and was rejected outright at one community meeting, although such a route is shown on the County Development Guide. The third received surprising support in some discussions. The second alternative, widening existing primary roads, is the most frequently mentioned solution.

There is a danger in the first and second that improved highway access would put more areas of Currituck within commuting distance

of the metropolitan area--accelerating the rate of growth in the county.

Access to Sound and Ocean. This issue has been frequently mentioned, and it is the one major issue about which there seems to be a clear concensus, that is: There is a need for more beaches, parks, boating ramps and other public access to the sound and ocean.

Outer Banks Access. The search for a permanent access route to the Currituck County Outer Banks has gone on since the 1930s. In 1939 a road from Duck to Corolla was added to the Secondary road system and to the official highway maintenance maps. However, the "road" was actually just criss-crossing sandy tracks, negotiable only by off-road vehicles, and, it was never regularly maintained. In 1974, the Division of Highways finally disclaimed any responsibility for the road, although it was never officially abandoned or deleted.

In 1949 and again in 1965, local acts were introduced authorizing a turnpike authority to build a road between Duck and Virginia Beach. On both occasions, the legislation was found unconstitutional before any serious evaluation was made of the project.

The Outer Banks Development Plan recommended that "initial access (to the outer banks) should be by a ferry which can carry passengers in large numbers and vehicles in small numbers"; the plan recommended two ferry routes, one between Knotts Island and Carova Beach, and another between Aydlett (or Waterlily) and Corolla. The objectives of the access scheme in the Plan were to "create a destination beach" (avoiding a thoroughfare highway along the outer banks strand) and to "connect the outer banks with the mainland for cultural and economic reasons."

In January 1974, a "Transportation Philosophy for Currituck Banks" was cosigned by the County and the Secretaries of Natural and Economic Resources, Transportation, Human Resources, and Administration. The "Transportation Philosophy" was a mutual endorsement of the Currituck Plan concept. In the spring of 1974, marine engineers from the Department of Transportation visited the county to study possible sites for a ferry terminal, and State engineers prepared preliminary cost estimates for a ferry project.

Outer Banks developers offered the state $1 million in land and/or cash toward the implementation of a ferry system; no response was ever made to the offer.

Access to the Outer Banks has also been discussed in conjunction with the proposed False Cape (Va.) State Park. The park land lies between the N.C.-Va. State Line and the Back Bay Wildlife Refuge. Planners are seeking a route to provide access to the park without

disturbing the Refuge. A route favored by many, known as "Corridor 9", would access the park via Knotts Island. This route would also be a means of access to the Currituck Outer Banks.

Access to the beach via Knotts Island is an alternative favored by the Outer Banks Civic League, a group which represents many Currituck Outer Banks residents and property owners. The County Commissioners have opposed a "northern route" fearing that it would lead to a thoroughfare highway down the beach and to an unmanageable development situation.

Industrial Development. At community meetings, the most controversial growth issue was the desirability of encouraging industrial development in the county. The need to diversify the tax base, and a need to provide jobs in the community have been cited in favor of encouraging industry. More rapid growth due to industry locating here, concern about the environment, and a realistic appraisal of the county's limited locational advantages have been cited in opposition to the encouragement of industry.

The Commission's final concern, the protection of cultural and historic resources, was clearly of less concern than the first four. Discussion of this topic was not spontaneous as with the others. It was generally agreed that the listing of properties in the National Register of Historic Places and the willingness of property owners to allow archeological excavation were sufficient evidence of local concern for this issue.

Goals, Objectives, and Policies

Mobile Homes: By 1985 mobile homes should be reduced from 26% of the County's housing stock to 14%.

Comment: It is assumed that mobile homes will increase from about 8% of the Statewide housing stock to 14% by 1985. However, it is hoped that mobile homes will represent a smaller percent of the County's housing stock in 1985 due to the following policies and standards:

- No more mobile home parks should be permitted in the county. Existing parks should not be expanded.
- All mobile homes should be properly tied down and skirted.
- In mobile home subidivision, there should be standards set for the type, placement and number of outside storage buildings.

- Mobile homes should be excluded from areas where there is a clear community concensus favoring this. Local community meetings should be held to "fine-tune" the zoning regulations.
- The County should ask nearby Virginia localities to relax their restrictive treatment of mobile homes.
- All mobile homes should display a decal indicating that the mobile home has been registered (and is paying taxes, if appropriate).

Growth: Zoning, Subdividion Regulations, Utility Policies, and Permit letting under the Coastal Area Management Act should be directed toward the maintenance of a rural, agriculturally-oriented community.

- In reviewing proposed subdivisions particular scrutiny should be applied to proposals to develop marginal land. Much of the recent growth in the county has been due to the availability of cheap lots, carved from low lying land with poor soils.
- Plans for water and sewer utilities should be held in abeyance for several years.
- A "chamber of commerce" promotional mentality should be avoided.

Major Thoroughfares:

- As an alternate or additional means of access to the banks, a mid-county bridge or causeway should be considered.
- A causeway should be built from Knotts Island to the Outer Banks.
- The N. C. 168/N.C. 34/U.S. 158 Corridor should be four laned.
  (1) The first phase of the project should be in the Grandy area.
  (2) Plans for the proposed high span bridge at Coinjock should include relocation assistance to tourist-oriented businesses.
- Ferry service between Currituck and Knotts Island should be increased.
  (1) To allow Knotts Island residents to participate in County affairs, and
  (2) To provide access to the Outer Banks via Knotts Island.

Access to Sound and Ocean:

- The State should acquire a public beach area on the outer banks.
- County subdivision regulations should require public access ways to the beach every 1500' in ocean front developments.
- The State and/or County should establish additional boating access points, with adequate parking facilities and picnic areas.

Industrial Development: The County, with State assistance, should try to encourage appropriate industries to locate in Currituck. Development of their airport industrial site is recommended, provided that necessary public facilities can be made available there.

ESTIMATED DEMAND

This chapter summarizes the development outlook for Currituck County over the next ten years. The following factors are discussed:

- Population growth, both permanent and seasonal
- Major economic trends
- Future land needs
- Future community facilities needs

Ten Year Population Projection

Currituck County's population is expected to grow to 23,700 by the year 1985. Of these, it is anticipated that 17,700 will be permanent residents and the remaining 6,000 will be seasonal residents.

5, 10, 25, and 50 Year Projections

Year	Permanent	Seasonal	Total
1975	9,500	1,300	10,800
1980	13,500	2,940	16,440
1985	17,700	6,000	23,700
2000	30,000	21,000	51,000
2025	50,000	46,000	96,000

Projection Methodology

Estimate of 1975 population was based upon a dwelling unit count by County staff in the spring of 1975.

Projections for permanent population in 1980, 1985, and 2000 are averages of independent projection by:

- Moore-Gardner and Associates, Feasibility Study on Water Facilities, 1974: projection based on apparent growth rate for period 1970-1973.
- State of N. C., Division of Community Planning Community Facilities Plan, 1973: projection based on cohort survival method.
- Stevens and Associates, Population and Economy 1974: projection derived from employment forecast.

Permanent population for the year 2025 is a straight line extension of the projected 1975-2000 increase.

Seasonal population in 1975 is estimated from a count of seasonal dwelling units made by County staff: 522 D.U. x 3.5 persons/ D.U. x 0.75 peak utilization rate.

Seasonal population for 1980 assumes 100 new seasonal D.U. per year on the Outer Banks and 25 per year on the Mainland: 1975 + 5 (125 x 3.5 x 0.75).

Seasonal population for 1985, 2000, and 2025 are largely judgemental estimates taking into account the number of recorded lots on the Outer Banks.

Population Projections vs. Desires of the People

The "desires of the people" consist of the views of Mainlanders on the one hand and of those with interests in the Outer Banks on the other.

The most desirable future for the County, as seen by long-time Mainland residents, is that it remain a rural-agricultural community. This does not require the adoption of a no-growth policy: such a policy is recognized as harmful to the County in the long run and probably impossible to carry out in any event. It does require the County to regulate the nature, location, and rate of development so as to minimize the adverse impact of such development on the County's present social and economic fabric. In summary, these people are not particularly concerned with population projections: they are concerned with the future quality of life in the County regardless of population level.

Few spoke for the Outer Banks. Of those who did, virtually none were concerned with the future of the Mainland nor with the ultimate volume and nature of development on the Outer Banks. Their principal concern was the provision of improved access to their properties.

Thus, if a true county-wide concensus on future growth is to be stated, it must come from the Board of Commissioners. This plan embodies the Board's position.

Capability of Land and Water to Sustain Growth

Assuming proper enforcement of existing health regulations (i.e. water supply and sewage disposal), there is no doubt that the county's land and water resources can sustain the growth projected for the Mainland over the next ten years.

The situation on the Outer Banks is not so favorable. In their 1974 Feasibility Study on Water Facilities, Moore, Gardner & Associates summarized it as follows:

The one-half acre lots now existing on the Outer Banks of Currituck County were recorded at a time when they met the county requirements and cannot be denied building permits. However, it is the opinion of the county and State Health Department, the North Carolina Office of Water & Air Resources, and the County's Engineers that this size lot, when the subdivision is fully developed, will not provide ade-

quate treatment of sewage or protection of the surficial water supply. When residential construction is begun in these areas, the effect of septic tanks for wastewater disposal on groundwater supplies will be continually monitored by the Health Department. The appearance of coliform bacteria will be sufficient grounds to deny septic tank permits on adjacent lots. It is anticipated that ultimate development of subdivisions with this size lot would result in building permits being issued on every second or third lot if individual wells and septic tanks are to be utilized.

The statement above, though originally directed at the Carova Beach development, is obviously applicable to all Outer Banks development in which septic tanks are utilized. To date, construction at Carova Beach and elsewhere has been minimal.

No one can estimate accurately when problems may begin to occur: many lots were purchased as investments and for retirement homes with no construction planned for years. When the time comes, the County and the affected property owners will review the options available and take such action as may be warranted. In the mean time, the County will guide and monitor development throughout the county as best it can under the law.

Economic Trends and Factors

The major trends and factors characterizing the County's economy for the next ten years are summarized by the County's consulting economist, (Stephens and Associates, Raleigh, N.C. 1974):

"Currituck is just coming under the influence of the Norfolk-Portsmouth economic region; however, the future strength and vitality of its economy will depend upon the forces of the broader region. The evolution of Currituck's economy over the past few years has produced significant changes in the residents commutation patterns. Between 1960 and 1970, the share of the County's total labor force commuting the Norfolk-Portsmouth area increased from 27.0 percent to 31.3 percent. During the same period, the share of the total labor force commuting outside the county for employment increased from 30.0 percent to 49.4 percent." This situation is expected to continue for some time. The County simply does not have the locational advantages necessary to attract a significant amount of industry. The development of a local recreation industry is not a consensus goal, and development of service type employment related to outer banks development will not occur for some time. Most of the seasonal increases will not occur until later in the planning period (1975-1985). At that time there will be a definite need for additional fire, rescue and police service on the outer banks.

Community Facilities Demand 1975-1985

Schools: As noted above, the County's current school construction program is expected to be adequate throughout the 1975-1985 period.

Roads: The county's major transportation needs during 1975-1985 are relief of congestion at specific points on U.S. 158/N.C. 34/N.C. 168 and the provision of improved access to the Outer Banks. These are the responsibility of the N.C. Department of Transportation.

Water and Sewer: Developers of Outer Banks property will construct these facilities as necessary at their own expense. The construction of public water and sewer on the Mainland is not anticipated within the next ten years. Where needed on the Mainland, water and sewer will be built by developers at their own expense.

Community facilities demands are based upon the assumption that the county's permanent population will not substantially exceed 17,700 in the year 1985.

Currituck County's economy should be able to meet with ease the demands placed upon county government by the population growth expected during 1975-1985. This is because (1) no major school construction is envisioned and (2) water and sewer facilities, if any, will be built by developers. It is true that general local government expenses will climb during this period but this will be due only in part to population growth. (It is unlikely, for instance, that the county employees' wage scale would double because of a like increase in population.) County budget-makers have more to fear from inflation, from spending programs mandated by state and federal governments, and from the chronic inefficiency of the local property tax. (Note: The property tax seems to be less inefficient in Currituck than in many other counties. Though almost completely undeveloped and comprising only one-sixth of the county's land area, the Outer Banks already yield about one-third of the county's real property tax revenue.)

Future Land Needs

The anticipated population growth, both permanent and seasonal, means that much now vacant land will be converted to home sites and supporting uses (principally commercial) in coming years. The acreage so consumed will be a function of the density of that development. As will be seen in the next chapter, "Land Classification," acreage sufficient to accommodate the growth expected during the next ten years--at least in gross terms--has already been platted.

LAND CLASSIFICATION

The North Carolina Land Classification System contains five classes of land, generally defined as follows:

Developed--Lands where existing population density is moderate to high and where there are a variety of land uses which have the necessary public services.

Transition--Lands where local government plans to accommodate moderate to high density development during the following ten year period and where necessary public services will be provided to accommodate that growth.

Community--Lands where low density development is grouped in existing settlements or will occur in such settlements during the following ten year period and which will not require extensive public services now or in the future.

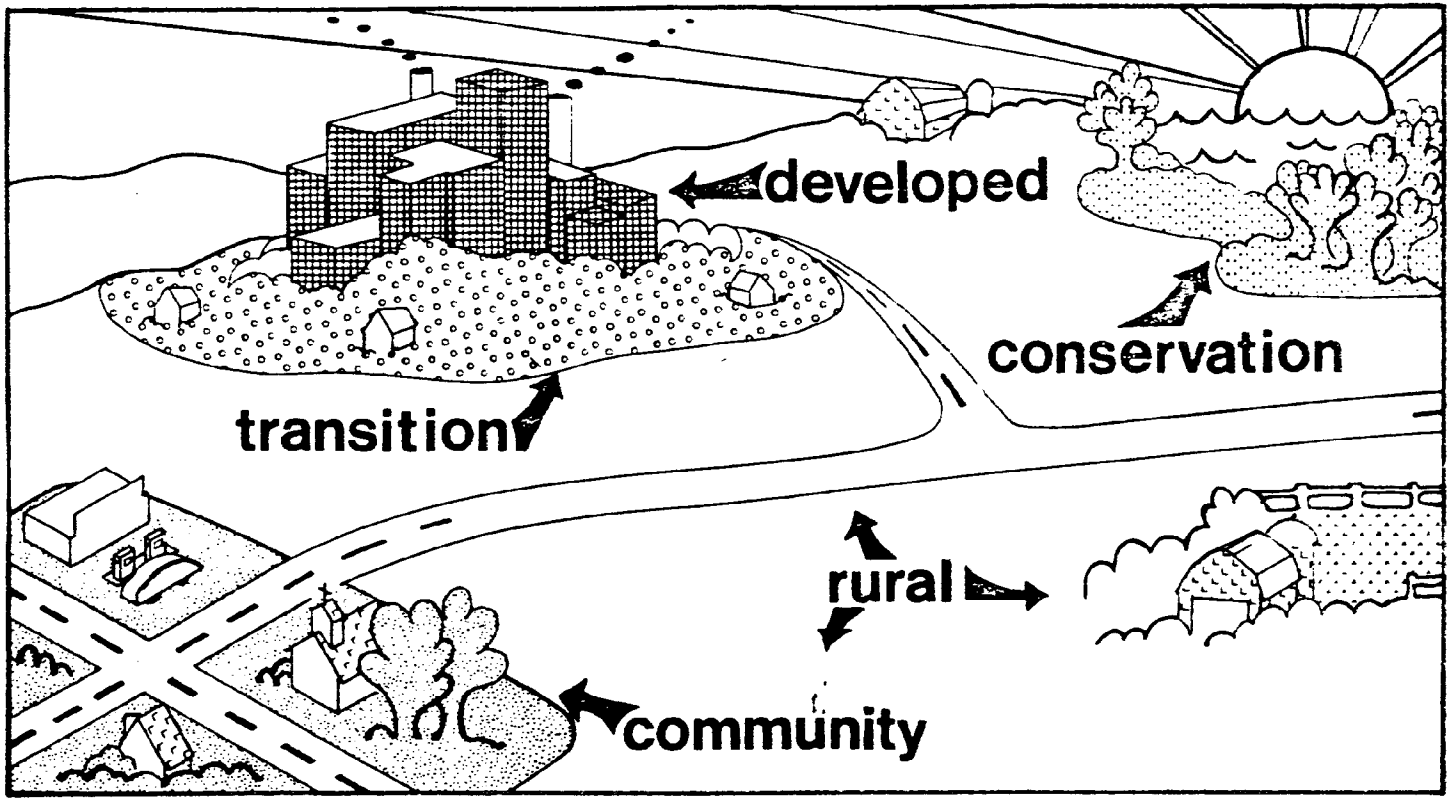
Rural--Lands whose highest use is for agriculture, forestry, mining, water supply, etc., based on their natural resources potential. Also, lands for future needs not currently recognized.

Conservation--Fragile, hazard and other lands necessary to maintain a healthy natural environment and necessary to provide for the public health, safety or welfare.

The land classification system provides a framework to be used by local governments to identify the general use of all lands in each county. Such a system presents an opportunity for the local government to provide for its needs as well as to consider those of the whole state. The land classification map thus becomes a statement of policy on where and to what density local government wants growth to occur, and where natural resources are to be conserved by guiding growth.

As a statement of local policy consistent with statewide needs and goals, the county land classification map will serve as a basic tool for coordinating numerous policies, standards, regulations, and other governmental activities at the local, state and federal level. Such coordination may be described by five applications:

> The Land Classification System encourages coordination and consistency between local land use policies and those of State Government. Lands are classified by the local governments. The Coastal Resources Commission then reviews those classifications to ensure conformance with minimum guidelines for the system. The coastal county maps taken together will be the principal policy guide for governmental decisions and activities which affect land uses in the coastal area.



Under the land classification system all land will be placed into one of five classes.

The **Developed** class will include existing urban areas which are currently supplied with a full range of public services including water and sewer facilities.

The **Transition** class will identify those areas with land good for urban development which will be supplied with public services to accomodate future population and economic growth.

The **Community** class will include existing clustered rural residential and commercial areas such as crossroads developments. These areas may require a public water system but public sewers should not be allowed.

The **Rural** class will identify those lands good for agriculture, forestry, mining, and other land uses such as rural housing depending on private wells and septic tanks.

The **Conservation** class will identify those areas which due to their significant, limited, or irreplaceable natural, recreational, or scenic resources need to be protected.

The System provides a guide for public investment in land. For example, state and local agencies can anticipate the need for early acquisition of lands and easements in the Transition class for schools, recreation, transportation, and other public facilities.

The System can also provide a useful framework for budgeting and planning for the construction of community facilities such as water and sewer systems, schools, and roads. The resources of many state and federal agencies, as well as those of the local government which are used for such facilities, can then be more efficiently allocated.

In addition, such a System will aid in better coordination of regulatory policies and decisions. Conservation and Rural Production lands will help focus the attention of state and local agencies and interests concerned with the valuable natural resources of the state. On the other hand, lands in the Transition and Community classes will be of special concern to those agencies and interests who work for high quality development through local land use controls such as zoning and subdivision regulations.

Finally, the System can help to provide guidance for a more equitable distribution of the land tax burden. Private lands which are in the Rural and Conservation classes should have low taxes to reflect the policy that few, if any, public services will be provided to these lands. In contrast, lands in the Transition class should be taxed to pay for the large cost of new public services which will be required to support the density of growth anticipated.

The local land classifications maps must be updated every five years. Each class is designed to be broad enough so that frequent changes in maps are not necessary. In extreme cases, such as when a large key facility, causing major repercussions, is unexpectedly placed in a county, the Coastal Resources Commission can allow a county to revise its classification map before the five year period is over.

In addition, the Land Classification System allows a variety of detailed land uses such as residential, commercial, industrial, recreational, etc. to occur within these classes. There is flexibility under existing law to change these detailed land uses whenever necessary.

Policies, rules, and actions concerning Areas of Environmental Concern shall take precedence over policies, rules, and actions concerning the Land Classifications, in the event of any conflicts.

Applying the Classification System in Currituck County

The classification map must be consistent with existing and anticipated conditions in the community (e.g. present and future economy, presence of fragile areas, etc.) and in accordance with the land classification specifications set forth in the Guidelines. For the most part this is done by determining which class definition best describes a given tract of land. Local government is, however, given some latitude in classifying lands needed to accommodate the population growth expected during the next ten years.

The second requirement is that the community's development objectives, policies, and standards serve as a guide to land classification: the plan must expressly describe the relationship between those statements and the location and extent of the various classifications within the community. This is the more difficult task in view of the requirements to classify by "sieve" or definitional analysis. To the extent that classifications are dictated by definition, only an artificial relationship to local policy can be shown. In effect, the community must adopt the objective or purpose of the various classifications as stated in the Guidelines. Some clear-cut policy choices have been made for Currituck County, however, with respect to the identification of land needed to accommodate population growth.

The remainder of this section describes the contents and derivation of the Land Classification Map. The purpose and definition of each class are stated as are their general locations within the county. These are followed by a statement of their relation to community objectives.

Developed

Purpose: The Developed class identifies developed lands which are presently provided with essential public services. Consequently, it is distinguished from areas where significant growth and/or new service requirements will occur. Continued development and redevelopment should be encouraged to provide for the orderly growth in the area.

Description: Developed lands are areas with a minimum gross population density of 2,000 people per square mile. At a minimum, these lands contain existing public services including water and sewer systems, educational systems, and road systems -- all of which are able to support the present population and its accompanying land uses including commercial, industrial, and institutional.

Location in Currituck County: Two areas qualify as "Developed" land: (1) the Universal Trailer Park in the northwest quadrant of the county, and (2) the Walnut Island subdivision near Grandy. Both are served by private water and sewer systems and both have attained a density of more than 2,000 people per square mile though they have an aggregate area of less than one square mile.

Relationship to Local Objectives: Developed land is mapped by definition.

Transition

Purpose: The Transition class identifies lands where moderate to high density growth is to be encouraged and where any such growth that is permitted by local regulation will be provided with the necessary public services.

Description: The area to be designated as Transition must be no greater than that required to accommodate the estimated county population growth at a minimum gross density of 2,000 people per square mile. For example, if the population increase for the following ten year period is projected to be 10,000 people, and it is planned that 8,000 of them will be accommodated in the Transition area, then no more than four square miles of Transition area should be shown. In addition, the minimum services which will be required are the necessary water and sewer facilities, educational services, and roads. Consideration must be given to the cost of public services in the Transition area. Each local government is encouraged to estimate the approximate cost of providing public services where they do not already exist.

Land to be classified Transition should be considered in the following order:

1) First priority is for lands which presently have a gross population density of more than 2,000 people per square mile, but do not qualify as Developed because they lack the necessary minimum public services. These areas may not be expected to accommodate additional population, but they will require funds for services to avoid public health and safety problems.

2) Second priority is for lands that have all the necessary public services in place, but which lack the minimum gross population density of 2,000 people per square mile needed to qualify the area as Developed. These areas therefore have not utilized the capacity of the existing services.

3) Additional lands necessary to accommodate the remainder of the estimated Transition growth for the ten year planning period.

In choosing lands for the Transition class, such lands should not include:

1) Areas with severe physical limitations for development with public services.

2) Lands which meet the definition of the Conservation class.

3) Lands of special value such as the following unless no other reasonable alternative exists:

   (a) Productive and unique agricultural lands;

   (b) Productive forest lands;

   (c) Potentially valuable mineral deposits;

   (d) Potential aquifers and key parts of water supply watersheds;

   (e) Scenic and tourist resources;

   (f) Habitat for economically valuable wildlife species;

   (g) Flood fringe lands;

   (h) Open coast flood hazard areas, exclusive of ocean erosive areas;

   (i) Estuarine flood hazard areas, exclusive of estuarine erosive areas.

Location in Currituck County: Transition areas are mapped (1) on the Outer Banks, and (2) on the west side of the mainland near Mamie ("Currituck Village").

The Outer Banks transition area covers approximately 2,700 acres and would accommodate a population of approximately 8,400 people at the minimum density of 2,000 persons per square mile.

Currituck Village is a planned unit development of approximately three hundred acres. This would yield a minimum future population of approximately 1,000 people.

Relationship to Local Objectives: Transition areas are those in which the county wishes to accommodate moderate to high density development during the next ten years and where necessary public services will be provided. It is the desire of the county and

specifically of those who participated in the CAMA planning process--to accommodate the majority of moderate to high density growth not on the mainland but on the Outer Banks. One of the county's stated objectives is to maintain a rural, agriculturally--oriented community, a clear reference to the mainland, for the Outer Banks are not suitable for agriculture.

The assignment of most transition land to the Outer Banks is also consistent with present market forces and with local attitudes toward the County's constructing water and sewer facilities on the mainland. (The voters rejected a water system bond referendum in 1974.) Such facilities would be provided by Outer Banks developers. Mainland real estate by and large is simply not capable of supporting similar costs. Curritown Village is expected to be an exception: it is anticipated that the development will occur within the next few years. The developer will assume the capital cost of water and sewer facilities.

Community

Purpose: The Community class identifies existing and new clusters of low density development not requiring major public services.

Description:

1) The Community class includes existing clusters of one or more land uses such as a rural residential subdivision or a church, school, general store, industry, etc. (Cluster is defined as a number of structures grouped together in association or in physical proximity - Webster's Dictionary).

2) This class will provide for all new rural growth when the lot size is ten acres or less. Such clusters of growth may occur in new areas, or within existing community lands. In choosing lands for Community growth, such lands should not include:

   (a) Areas with severe physical limitations for development;

   (b) Areas meeting the definition of the Conservation class;

   (c) Lands of special value such as the following unless no other reaonsable alternative exists:

      (1) Productive and unique agricultural lands;

      (2) Productive forest lands;

      (3) Potentially valuable mineral deposits;

      (4) Potential aquifers and key parts of water supply watersheds;

      (5) Scenic and tourist resources;

      (6) Habitat for rare and endangered wildlife species and economically valuable wildlife species;

      (7) Flood fringe lands;

(8) Open coast flood hazard areas, exclusive of ocean erosive areas;

(9) Estuarine flood hazard areas, exclusive of estuarine erosive areas.

3) In every case, the lot size must be large enough to safely accommodate on-site sewage disposal and where necessary water supply so that no public sewer services will be required now or in the future.

4) Limited public services should be provided in the Community class such as public road access, electric power, and water where necessary to correct health hazards.

5) As a guide for calculating the amount of land necessary to accommodate new rural community growth, a gross population density of 640 people per square mile or one person per acre should be used. For example, if 1,000 new people are expected to settle in low density clusters during the following ten year period, then roughly 1,000 acres of land should be allocated for new growth in Community class areas.

Location in Currituck County: Numerous community areas are mapped on the mainland and on Knotts Island. These include an aggregate area of approximately 6,900 acres.

Community land on the Outer Banks totals some 5,000 acres.

Relationship to Local Objectives: Community lands are the most difficult of the five classes to map for the definition does not specify "start" and "stop" points on the ground. Thus, in delineating existing communities, there is danger of including either too much or too little land. This is a serious shortcoming of the class since the acreage so classified should be a function of future population.

The relationship of community class acreage to future population points to another failing of the definition: it provides no guidance as to treatment of platted subdivisions vis-a-vis future population. A county such as Currituck may contain a dozen or more subdivisions within which construction is occurring at varying rates. The total number of lots within these may be ten times the number required to accommodate the population growth anticipated during the next years. It would be unwise to ignore the existence of such subdivisions for planning (land classification) purposes, regardless of the rate of construction and absorption. Nor would it be legally possible to halt construction therein merely to satisfy the land classification system.

How, then, is the problem to be resolved?

The answer seems to be that the community class must be mapped on some basis other than that of allocating population growth to

specific areas at an arbitrarily selected density. Accordingly, the Currituck County land classification map indicates as Community land virtually all subdivisions which have received such local approvals as are pre-requisite to construction and which do not meet the definition of the Transition or Developed class.

The mapping of community land is consistent with the objective of maintaining a rural, agriculturally-oriented community.

e. Conservation

Purpose: The Conservation class identifies land which should be maintained essentially in its natural state and where very limited or no public services are provided.

Description: Lands to be placed in the Conservation class are the least desirable for development because:

1) They are too fragile to withstand development without losing their natural value; and/or

2) They have severe or hazardous limitations to development; and/or

3) Though they are not highly fragile or hazardous, the natural resources they represent are too valuable to endanger by development.

Such lands at a minimum should include:

1) Fragile

   (a) Wetlands

   (b) Steep slopes and prominent high points

   (c) Frontal dunes ("foredune")

   (d) Beaches

   (e) Surface waters including
   - Lakes and ponds
   - Rivers and streams
   - Tidal waters below mean high water

   (f) Prime wildlife habitat

   (g) Unique natural areas and historic and archaeological sites.

2) Hazard

(a) Floodways

(b) Ocean erosive areas

(c) Inlet lands

(d) Estuarine erosive areas

3) Other

(a) Publicly owned forest, park, and fish and game lands and other non-intensive outdoor recreation lands

(b) Privately owned sanctuaries, etc., which are dedicated to preservation

(c) Publicly owned water supply watershed areas

(d) Undeveloped key parts of existing water supply watersheds

(e) Potential water impoundment sites

In addition to the above named types of land, a county may include other areas to be maintained in an essentially natural state which are needed to implement their stated policy objectives.

Location in Currituck County: The major Conservation lands in Currituck County include the following:

- Marshes bordering Currituck Sound and the North River
- Mackay Island National Wildlife Refuge
- Northwest River Marsh Wildlife Area
- North River Game Management Area
- Water access areas owned by the N. C. Wildlife Resources Commission

In addition to these, it is the intent of this plan to include the following as Conservation land areas though not all may be mapped due to limitations imposed by the scale of the map:

- Frontal dunes
- Beaches
- Rivers and streams
- Tidal waters below mean high water
- Floodways
- Ocean erosive areas
- Estuarine erosive areas

Relationship to Local Objectives: The Conservation areas listed above are designated in accordance with the Guidelines. However, they are also consistent with the objectives and policies adopted by the County as part of The Currituck Plan.

Certain types of potential Conservation lands have been excluded. These include:

- Prominent high points
- Prime wildlife habitat not otherwise protected for this purpose
- Unique natural areas
- Historic and archeological sites

Currituck County will consider the reclassification of such land to the Conservation class on a case-by-case basis. Such determination will be made based upon reports by experts that an area is so fragile or presents such a great hazard for development that it should be maintained in essentially its natural state.

Rural

Purpose: The Rural class identifies lands for long-term management for productive resource utilization, and where limited public services will be provided. Development in such areas should be compatible with resource production.

Description: The Rural class includes all lands not in the Developed, Transition, Community and Conservation classes.

Location in Currituck County: Most of the Currituck mainland is classified Rural, as in the eastern side of Knotts Island.

Relationship to Local Objectives: Rural land is mapped by definition. It is also consistent with the objective of maintaining a rural-agriculturally-oriented community.

AREAS OF ENVIRONMENTAL CONCERN

The Coastal Area Management Act provides that local land use plans "shall give special attention to the protection and appropriate development of Areas of Environmental Concern."

The Legislature found that "the coastal area, and in particular the estuaries, are among the most biologically productive regions of this State and of the nation" but in recent years the area "has been subjected to increasing pressures which are the result of the often conflicting needs of a society expanding in industrial development, in population, and in the recreational aspirations of its citizens."

"Unless these pressures are controlled by coordinated management." the Act states, "the very features of the coast which make it economically, aesthetically, and ecologically, aesthetically, and ecologically rich will be destroyed."

To prevent this destruction the Act charges the Coastal Resources Commission with the responsibility for identifying types of areas, and designating specific areas--water as well as land--in which uncontrolled or incompatible development might result in irreparable damage. It further instructs the Commission to determine what types of use or development are appropriate within such areas, and it calls on local governments to give special attention to these environmentally fragile and important areas in developing their land use plans.

The Coastal Resources Commission and local government, with the assistance and guidance of the Coastal Resources Advisory Council, share a unique statutory assignment, for this is the first time North Carolina has undertaken such a massive and comprehensive determination of its critical land and water areas.

The Commission has chosen to emphasize this intended local involvement by acting on a Coastal Resources Advisory Council recommendation that provides local governments the opportunity to become a more effective participant in the AEC process. This recommendation gives the local governments the option of preparing maps delineating the boundaries of specific AECs within their respective jurisdictions.

This delineation will serve to assist the Commission in the ultimate designation of AECs and will provide data for use in local land use planning. The Commission will use the delineations supplied by local governments for the purpose of analyzing the territorial extent of the various proposed AEC categories.

The written identification and delineation on maps by local governments will not serve as a designation of AECs for the purposes of permit letting. The designation of AECs for purposes of the permit program shall be by a written description adopted by the Commission, and such designations will be equally applicable to all local governments in the coastal area. At the present time the Commission will not attempt to map AECs with sufficient detail to enable a permit letting agency in all cases to determine solely on the basis of such a map whether a particular area falls within an Area of Environmental Concern. The determination as to whether a particular area is within an AEC will be based on the written description of the Area of Environmental Concern which will be adopted by the Commission. The Commission will continue to study the possibility of mapping AECs with sufficient detail to serve in this permit program and may base the permit program on maps if the capability exists to do so.

For the local government identification program, the local governments shall use the categories and descriptions included in the Guidelines.

Those involved locally in identifying proposed AECs for inclusion in the land use plans are encouraged to contact the CRC at anytime that questions arise concerning the proposed AEC definitions. Local governments are also encouraged to make written recommendations as to the exclusion of proposed AECs, the includion of additional AECs, or changes in the description of proposed AECs. Such recommendations are not a part of the local land use plan and should be submitted separately.

The Commission, in summary, specifically requires that the local plans include identification of each potential AEC. The plan must also be include written statements of specific land uses which may be allowed in each of the proposed classes of AECs. These allowable land uses must be consistent with the policy objectives and appropriate land uses found in the Guidelines.

It should be noted that there are a few instances where one category of Areas of Environmental Concern may overlap with another. This is particularly true in Currituck County. Where this is found to occur, the policy of the Commission is to require the local plan to adopt allowable land uses within the area of overlap consistent with the more restrictive land use standard.

Coastal Wetlands

Coastal wetlands are defined by the N. C. General Statutes as "any salt marsh or other marsh subject to regular or occasional flooding by tides, including wind tides (whether or not the tide waters reach the marshland areas through natural or artificial watercourses), provided this shall not include hurricane or tropical storm tides. Salt marshland or other marsh shall be those areas upon which grow some, but not necessarily all, of the following salt marsh and marsh plant species: Smooth or salt water Cordgrass (Spartina alterniflora); Black Needlerush (Juncus roemarianus); Glasswort (Salicornia spp.); Salt Grass (Distichlis spicata); Sea Lavender (Limonium spp.); Bulrush (Scirpus spp.); Saw Grass (Cladium jamicense); Cat-Tail (Typha spp.); Salt Meadow Grass (Spartina patens); And Salt Reed Grass (Spartina cynosuroides)." Included in this statutory definition of wetlands is "such contiguous land as the Secretary of NER reasonably deems necessary to affect by any such order in carrying out the purposes of this Section."

Policy Objective. To give a high priority to the preservation and management of the marsh so as to safeguard and perpetuate their biological, economic and aesthetic values.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Highest priority shall be allocated to the conservation of existing marshlands. Second priority for land uses allocation of this type shall be given to development which requires water access and cannot function anywhere else, such as ports, docks and marinas, provided that the actual location of such facilities within the marsh consider coastal, physical and biological systems and further provided that feasible alternatives regarding location and design have been adequately considered and need for such development can be demonstrated. Such allocation may only be justified by the projected land use demands and by community development objectives, but in no case shall the allocation exceed the capacity of the marshland system to sustain losses without harm to the estuarine ecosystem unless the losses would be offset by a clear and substantial benefit to the public.

Estuarine Waters

Description. Estuarine waters are defined in G.S. 113-229 (n) (2) as, "all the water of the Atlantic Ocean within the boundary of North Carolina and all the waters fo the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Conservation and Development filed with the Secretary of State entitled ' Boundary Lines, North Carolina Commercial Fishing-Inland Fishing Waters, revised March 1, 1965,'" or as it may be subsequently revised by the Legislature.

Policy Objective. To preserve and manage estuarine waters so as to safeguard and perpetuate their biological, economic and aesthetic values.

Appropriate Uses. Appropriate uses shall be those consistent with the above policy objective. Highest priority shall be allocated to the conservation of estuarine waters. The development of navigational channels, the use of bulkheads to prevent erosion, and the building of piers or wharfs where no other feasible alternative exists are examples of land uses appropriate within estuarine waters, provided that such land uses will not be detrimental to the biological and physical estuarine functions and public trust rights. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters are generally considered incompatible with the management of estuarine waters.

Aquifer Areas - Outer Banks and Barrier Islands

Description: Areas of well drained sands that extend downward from the surface to include an extensive area of fresh water that is an important source for a public water supply identified by the North Carolina Department of Human Resources, Division of Health Services, or that are classified for water supply use pursuant to G.S. 143-214.1.

Policy Objective. To eliminate as nearly as possible the potential for contamination of special aquifer areas that may result in a public health hazard or significantly limit the value of the aquifer as water supply source.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Special aquifer areas shall be planned for those kinds of development that will not rely upon subsurface waste disposal systems, result in injection of wastes into the ground, significantly increase the risk of accidental discharge onto the surface of liquid or other easily soluble contaminants, or increase the withdrawal of water from the aquifer to a rate that may cause saltwater intrusion. Inappropriate uses would include chemical or fuel processing or storage facilities or residential development employing septic tank sewage disposal systems. These AECs should be planned for low intensity of use where feasible, and new intensive development that must occur should be provided with public waste water disposal systems.

Complex Natural Areas

Description. Complex natural areas are defined as lands that support native plant and animal communities and provide habitat conditions or characteristics that have remained essentially unchanged by human activity. Such areas are surrounded by landscapes that have been modified but that do not drastically alter the conditions within the natural areas or their scientific or educational value. Such areas will be determined by the Commission, after consideration of written reports or testimony of competent experts, to be rare within a county or to be of particular scientific or educational value.

Policy Objective. To preserve the natural conditions of the site so as to safeguard its existence as an example of naturally occurring, relatively undisturbed plant and animal communities of major scientific or educational value.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Lands within the AEC shall not be planned for uses or kinds of development that will unnecessarily jeopardize the natural or primitive character of the natural area directly or indirectly through increased assessibility. Additionally, lands adjacent to the complex natural areas should not be planned for additional development that would unnecessarily endanger the recognized value of the AEC. The variability between kinds of complex natural areas and between land uses adjacent to those natural areas means that the range of permissible uses and intensity of use must be carefully tailored to the individual area.

Areas that Sustain Remnant Species

Description. Areas that sustain remnant species are those places that support native plants or animals, rare or endangered, within the coastal area. Such places provide habitat conditions necessary for the survival of existing populations or communities of rare or endangered species within the county. Determination will be by the Commission based upon accepted lists published by the State or Federal Government and written reports or testimony of competent experts indicating that a species is rare or endangered within the coastal area.

Policy Objective. To preserve habitat conditions necessary to the continued survival of rare or endangered native plants and animals and minimize development or land uses that might jeopardize known areas that support remnant species.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Lands within the AEC shall not be planned for uses or kinds of development that will unnecessarily jeopardize the habitat conditions responsible for the continued survival of the respective plants or animals.

Public Trust Water

Description. Areas such as waterways and lands under or flowed by tidal waters or navigable waters, to which the public may have rights of access or public trust rights and areas which the State of North Carolina may be authorized to preserve, conserve, or protect under Article XIV, Section 5, or the North Carolina Constitution. This includes specifically the following: 1) All waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of State jurisdiction; 2) all natural bodies of water subject to measurable lunar tides thereunder to the mean high water mark; 3) all navigable natural bodies of water and lands thereunder to the mean high water mark or ordinary high water mark as the case may be, except privately owned lakes to which the public has no right of access; 4) all waters in artificially created bodies of water in which exists significant public fishing resources or other public resources, which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; 5) all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication or any other means. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered: (i) the use of the body of water by the public; (ii) the length of time the public has used the area; (iii) the value of public resources in the body of water; (iv) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water; (v) whether the creation of the artificial body of water required permission from the State; and (vi) the value of the body of water to the public for navigation from one public area to another public area.

For purposes of the description in 5.0 and 5.1, the following definitions shall apply:

(1) Mean High water Mark means the line on the shore established by the average of all high tides. It is established by survey based on available tidal datum. In the absence of such datum, the mean high water mark shall be determined by physical markings or comparison of the area in question with an area having similar physical characteristics for which tidal datum is readily available.

(2) Navigable means navigable-in-fact.

(3) Navigable-in-fact means capable of being navigated in its natural condition by the ordinary modes of navigation including modes of navigation used for recreational purposes. The natural condition of a body of water for purposes of determining navigability shall be the condition of the body of water at mean high water or ordinary high water as the case may be, and the condition of the body of water without man-made obstructions and without temporary natural obstructions. Temporary natural conditions such as water level fluctuation and temporary natural obstructions which do not permanently or totally prevent navigation do not make an otherwise navigable stream non-navigable.

(4) Ordinary High Water Mark means the natural or clear line impressed on the land adjacent to the waterbody. It may be established by erosion or other easily recognized characteristics such as shelving, change in the character of the soil, destruction of terrestrial vegetation or its inability to grow, the presence of litter and debris, or other appropriate means which consider the characteristics of the surrounding area. The ordinary high water mark does not extend beyond the well defined banks of a river where such banks exist.

Policy Objective. To protect public rights for navigation and recreation and to preserve and manage the public trust waters so as to safeguard and perpetuate their biological, economic and aesthetic value.

Appropriate Uses. Appropriate uses shall be those consistent with the above policy objective. Any land use which interferes with the public right of navigation, or other public trust rights, which the public may be found to have in these waters, shall not be allowed. The development of navigational channels, drainage ditches, the use of bulkheads to prevent erosion, and the building of piers or wharfs are examples of land uses appropriate within public trust waters provided that such land uses will not be detrimental to the biological and physical functions and public trust rights. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters are generally considered incompatible with the management of public trust waters.

Sand Dunes along the Outer Banks

Description. Dunes are defined as ridges or mounds of loose wind-blown material, usually sand.

Policy Objective. To insure that development which is undertaken utilizes sound engineering practices to minimize the erosion effects of wind and water.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Only those developments that can be safely undertaken utilizing recognized engineering practices and site preparation and site maintenance to minimize unnecessary damage from wind and water should be allowed.

Ocean Beaches and Shorelines (on the Outer Banks)

Description. These are defined as land areas without vegetation covering, consisting of unconsolidated soil material that extends landward from the mean low tide to a point where any one or combination of the following occur: (1) vegetation, or (2) a distince change in predominant soil particle size, or (3) a change in slope or elevation which alters the physiographic land form.

Policy Objective. To preserve to the greatest extent feasible the opportunity to enjoy the physical, aesthetic, cultural and recreational qualities of the natural shorelines of the State and to allow that type development which will withstand the prevalent natural forces and not unreasonably interfere with the rightful use and enjoyment of the beach area.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective.

Natural Hazard Areas - Coastal Floodplains

Description. Coastal floodplain is defined as the land areas adjacent to coastal sounds, estuaries or the ocean which are prone to flooding from storms with an annual probability of one percent or greater (100 year storm). These areas are analogous to the 100 year floodplain on a river. Information necessary to identify these areas will be supplied by the State Geologist.

Policy Objective. To ensure that all buildings, structures, facilities and developments are properly designed and built to maintain their stability, integrity, and safety in the event of flood surge from a 100 year storm.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. It is reasonable to allow a certain degree of development if it is carefully controlled and meets stringent engineering standards for stability, integrity and safety during a 100 year storm. The land use plan may allow development activities, and if such development is undertaken, as a minimum it must conform with the standards of the Federal Insurance Administration for coastal high hazard areas and safety during the flood surge from a 100 year storm. (Code of Federal Regulations, Title 24, Chapter 10, Subchapter B)

Ocean Erodible Areas

Description. Defined as the area above mean high water where excessive erosion has a high probability of occurring. In delineating the landward extent of this area a reasonable 25-year recession line shall be determined using the best scientific data available.

Policy Objective. To limit unnecessary hazards to life or property or unreasonable requirements for public expenditures to protect property or maintain safe conditions.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective.

Estuarine and River Erodible Areas

Description. Defined as the area above ordinary high water where excessive erosion has a high probability of occurring. In delineating the landward extent of this area a reasonable 25-year recession line shall be determined using the best available information.

Policy Objective. To insure that development occurring within these areas is compatible with the dynamic nature of the erodible lands thus minimizing the likelihood of significant loss or property.

Appropriate Land Uses. Appropriate land uses shall be those consistent with the above policy objective. Permanent or substantial residential, commercial, institutional or industrial structures are not appropriate uses in estuarine and sound and river erodible areas unless stabilization has been achieved along the affected reach. Recreational, rural and conservation activities represent appropriate land uses in those erodible areas where shoreline protective construction has not been completed.

Development Standards Applicable to All AECs

a. No development shall be allowed in any AEC which would result in a contravention or violation of any rules, regulations, or laws of the State of North Carolina or of the local government in which the development takes place.

b. No development shall be allowed in any AEC which would have a substantial likelihood of causing pollution of the waters of the State to the extent that such waters would be closed to the taking of shellfish under standards set by the Commission for Health Services pursuant to G. S. 130-169.01.

APPENDICES

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
RALEIGH 27611

JAMES E. HOLSHOUSER, JR.
GOVERNOR

April 8, 1975

TROY A. DOBY
SECRETARY

Mr. H. O. Capps
Chairman, Board of Commissioners
County of Currituck
Currituck, North Carolina 27929

Dear Mr. Capps:

Thank you for your letter of March 3, 1975, concerning our Department of Transportation's position regarding access to the Outer Banks area of Currituck County.

Following the recent joint discussions with you, other members of the County Board of Commissioners, and members of the General Assembly; the policy of our Department of Transportation has been discussed and reviewed by the Board of Transportation.

At its meeting on April 4, 1975, the Board of Transportation adopted a resolution which sets forth the position of the Board with respect to access to the Outer Banks area of Currituck County. A copy of this resolution is enclosed for your information.

With best regards, I am

Sincerely,

Troy A. Doby, Secretary
Department of Transportation

TAD/BR/aj
Enclosure

N O R T H C A R O L I N A
DEPARTMENT OF TRANSPORTATION AND HIGHWAY SAFETY
BOARD OF TRANSPORTATION MEETING
APRIL 4, 1975

Chairman Doby called the meeting of the Board of Transportation to order at 9:40 a.m., Friday, April 4, 1975, in Raleigh, North Carolina, with the following members present:

Board Members Anderson, Brinson, Callahan, Greene, Garrison, Harris, Montgomery, Perry, Powell, Rhodes, and Vaughn.

Board Member Green was absent. He was represented by Mr. Allen Barbee, Member of the House of Representatives.

* * *

Board Member Callahan, Chairman of the Policy Committee, advised the Currituck County Board of Commissioners requested a "Statement of Policy" with respect to the Board recognizing the transportation needs in their county.

In compliance with this request, and on the recommendation of the Policy Committee, Mr. Callahan presented the following resolution, and made a motion that it be adopted. The motion was seconded by Board Member Vaughn, and duly carried. Board Members Anderson and Harris abstained from voting; Board Member Rhodes cast a negative vote.

"WHEREAS, the Board of Transportation recognizes the need for access to Currituck Outer Banks in Currituck County; and

"WHEREAS, the population density of the Currituck Outer Banks is constantly growing as a result of planned development; and

"WHEREAS, we recognize Currituck Outer Banks as an area of environmental concern:

"WE, THEREFORE, on this day, April 4, 1975, resolve that the Board of Transportation foresees the following means of transportation in the future for the orderly movement of people and goods from the Currituck County mainland to the Currituck Outer Banks in the priority order listed:

1. Direct land access by bridge at a location to be determined by future planning studies.

2. Direct land access by maintaining a South-North roadway from the Currituck-Dare County line northward to be constructed by others in compliance with standards of the Board of Transportation and made a part of the State Highway System.

3. Access via a ferry service from the mainland to a mid-point location on the island; such location to be determined by planning studies."

STATE OF NORTH CAROLINA

WAKE COUNTY

I, Myrtle R. Wall, secretary to the Board of Transportation, an agency of the State of North Carolina, do hereby certify that the foregoing is a true and correct excerpt of the minutes of the regular meeting of said Board on April 4, 1975.

IN WITNESS WHEREOF, I have hereunto set my hand this 8th day of April 1975.

Myrtle R. Wall

PRINCIPAL SOURCES

1. U. S. Department of Commerce, Bureau of the Census: U. S. Census of Population and Housing.

2. (George) Stephens and Associates, Raleigh, N.C.: Economic Development Program, Currituck County, (1974).

3. Field observations by Currituck County Manager and N. C. Department of Natural and Economic Resources.

4. Correspondence with Currituck County Manager.

5. Langfelder, Jay et. al.: A Preliminary Study of Storm-Induced Beach Erosion for North Carolina (1973). Center for Marine and Coastal Studies, N. C. State University, Report No. 73-5.

6. U. S. Department of Agriculture, Soil Conservation Service: Shoreline Erosion Inventory of North Carolina (1975).

7. N. C. Department of Conservation and Development, Division of Community Planning: Land Potential Study, Currituck County (1966).

8. N. C. Department of Water Resources, Division of Groundwater: Geology and Groundwater Resources of the Hertford-Elizabeth City Area, Ground Water Bulletin No. 10 (1966).

9. Wilson, K. A.: North Carolina Wetlands: Their Distribution and Management (1962).

10. Frankenberg, Dirk: "Salt Marshes," reprinted in Coastal Area Development: Proceedings of a Symposium: Simon Baker, ed.; University of North Carolina Sea Grant Program Publication 75-18 (1975).

11. Envirotek, Inc. Raleigh, N. C.: The Currituck Plan (1973).

12. CAMA Planning Guidelines

13. Envirotek, Inc. op. cit.

14. Land Potential Study, Currituck County, supra, p. 35ff.

15. N. C. Department of Natural and Economic Resources: A Preliminary List of Endangered Plant and Animal Species (1973).

16. Land Potential Study, Currituck County, supra, p. 25 ff.

17. Land Potential Study, Currituck County, supra, p. 20.

18. Conversation with Mr. Ed Bert, N. C. Department of Natural and Economic Resources, Office of Earth Resources.

19. N. C. Department of Natural and Economic Resources, Division of Community Assistance, Recreation Section.

20. N. C. Department of Transportation.

21. Currituck County Manager.